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ABSTRACT

These proceedings contain four presentations from a workshop at which leaders in agriculture and education contributed suggestions for developing policies and plans for the new Agricultural Extension Education Graduate Institute (AEEGI) in Taiwan. Introductory materials include a list of members of the planning committee, workshop rationale, workshop program, "Welcome Remarks" (Ching-Yin Chen), and "Introduction" (Cheng-Chang Li). "Extension Programs at National Chung Hsing University" (Tse-Chun Yang) is a one-page summary. "Some Challenges for the AEEGI: Suggested Characteristics for the Graduates" (O. Donald Meaders) recommends that graduates be willing and able and describes what they should be willing and able to do. "Trends in Agricultural Education in the United States with Implications for Taiwan" (William Thuemmel) provides a brief historical review of U.S. extension education and describes necessary changes in agricultural education and their implications for Taiwan. Participant recommendations are listed for these AEEGI functions: master's degree program; research program; vocational agriculture teacher preparation program; supervision of inservice program for vocational agriculture teachers and provision of inservice programs for agricultural extension personnel; and short-term agricultural management training courses. "Closing Remarks--Future Plans for AEEGI" (Cheng-Chang Li) is followed by a participant list. A Chinese language version of the text appears first in this volume. (YLB)

A SUMMARY OF PROCEEDINGS AND PARTICIPANT RECOMMENDATIONS FROM A NATIONAL WORKSHOP ON INSTITUTIONALIZING PROGRESS IN AGRICULTURAL EXTENSION AND EDUCATION IN TAIWAN

策進我國農業推廣教育新體制研討會專輯

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策進我國農業推廣教育新體制研討會專輯

中華民國八十年四月二十二日至二十四日

主辦單位

國立中興大學農學院

贊助單位

教　育　部
行政院農業委員會
台灣省政府教育廳

國立中興大學農學院發行

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陳世雄　國立中興大學農藝系副教授兼農學院秘書

陳本源　國立中興大學農業推廣委員會技正

策進我國農業推廣教育新體制研討會宗旨與目標

宗旨：

過去四十餘年來台灣在教育與農業方面都有重大的進步，但在最近十至十五年中，社會各部門，包括農業與教育的演變幅度日趨快速，農業職校師資與農業推廣人員在職訓練方面的調整，卻未能同步的進展。有鑑於此，教育部最近核准在國立中興大學設立農業推廣教育研究所，藉以協助建立農職教育與農業推廣的新體制，加速農業科技的轉移。本研討會特邀請農業與教育界領導人士，就建立上述新體制的相關問題，充分提供建言，並作爲興大農業推廣教育研究所策劃今後努力方向與重點的參考。

目標：

1. 指出國內農業推廣與農職教育所存在的問題及需要。
2. 擬定農業推廣教育研究所的工作方向與重點。
3. 增進教育與農業決策人士對於中興大學農業推廣教育研究所之了解與支持。

【附註】召開本研討會的五項討論議題，乃引用自密西根州立大學農業及推廣教育系教授梅德思博士之“國立中興大學農業推廣教育研究所成立方案”。該方案爲中興大學提供教育部作爲成立新研究所參考、評估的重要文件。

議　　程

民國八十年四月廿二日（星期一）

會前活動

18:30　專題演講：「農業推廣教育的基本理念」
主講人／中央研究院副院長李崇道博士

19:30　專題報告：「我國農業推廣法草案要點」
主講人／行政院農業委員會技監林世同先生

民國八十年四月廿三日（星期二）

開幕典禮

09:00－09:30　1.陳校長清義致歡迎詞
2.李院長成章簡述中興大學設立農業推廣教育研究所籌備經過，並介紹在場貴賓。
3.中央研究院李副院長崇道致詞
4.行政院農業委員會洪參事筆鋒致詞

09:30－10:00　攝影

第一部份　專題報告

主持人／林技監世同

10:00　中興大學農業推廣工作簡報── 楊策群教授

10:20　專題演講：「農業推廣教育研究所的考驗：研究生應具備的幾項特質」
主講人／美國密西根州立大學農業及推廣教育系梅德思教授

11:00　問題與答覆

12:45　專題演講：「美國農業教育之演變趨勢與台灣農業教育之展望」
主講人／沈慕德博士(美國麻薩諸賽州大學農業教育系主任、國立中興大學客座教授)

13:30　問題與答覆

14:00　中興大學農業推廣教育研究所之任務與分組討論題綱之綜合說明
主講人／林技監世同

第二部份　分組討論

15:00　第一議題：關於農業推廣教育研究所開設碩士學位課程之意見
指導員／中興大學謝快樂教授
第二議題：關於農業推廣教育研究所加強專題研究工作之意見
指導員／中興大學楊策群教授
第三議題：關於農業推廣教育研究所開設農業(工)職校師資培育課程之意見
指導員／中興大學胡啓和教授
第四議題：關於農業推廣教育研究所辦理農職學校教師及推廣人員在職講習之意見
指導員／中興大學宋濟民教授
第五議題：關於農業推廣教育研究所辦理農場經營講習之意見
指導員／中興大學彭作奎教授

民國八十年四月廿四日（星期三）

主持人／林技監世同

08:30　分組討論(續)
13:00　分組討論結論報告，由各組主席輪流作二十分鐘報告。

第三部份　綜合討論

15:00　聯合主持人／1.李院長成章
2.梅德思教授
3.沈慕德教授
15:45　結　論：農業推廣教育研究所未來發展計畫
主持人／李院長成章
16:00　研討會結束

我國農業推廣教育的基本理念

中央研究院副院長

李崇道

李院長、兩位在座的美國教授、中興大學在座的教授、嘉義與屏東農專農業推廣委員會的代表、各位農業(工)職校的校長和老師：中興大學爲了規劃最近奉准設立的農業推廣教育研究所今後的工作方向與重點，特地舉辦「策進我國農業推廣教育新體制研討會」，崇道刻意辭去了明天預定在台北舉行的兩個國際會議所須擔任的職務，趕到此次研討會預備會議的場合中與各位見面。按照崇道原定的計畫，我們在這裡見面，並不是什麼專題演講，而是一種不拘形式的座談會，彼此就「如何重振農業院校雄風」的重要話題，交換意見。因爲凡是一項體制上的改革，必須先在溝通過程中達成共識，改革的行動在共識的基礎上逐步實施，就較爲容易。

崇道近十餘年來，深感要使重大的農業政策落實，國內現行農業推廣與農業教育體制中所存在的問題，亟待有心之士作坦誠而深入的探討，謹以拋磚引玉的心情，先將崇道內心所經常思考的若干基本理念，向各位說明，並請多加指教。

一、重新建立我國農業推廣與農職教育的基本架構，我們固然可以借重美國、日本和歐洲等國家的優點與經驗，但更重要的是多考慮國內的實際問題與需要。美國贈地大學研究、教學和推廣緊密合作的體制，是經過幾十年的醞釀倡導，才奠下良好的基礎。我們要建立合乎理想的體制，難免要涉及人事、主計、法規等問題，單是一項新的農業推廣法，我們已經琢磨了十餘年，困難一定是有的，但只要大家鍥而不舍、下定決心去做，仍有成功之日。如果國內農業院校的校長與教授、試驗改良場所主管與專家、農林廳與農委會的同仁都下定決心，要把農業新知隨時傳送給全國每一位農民，這項重要的工作一定會做得到。現在我國新的農業推廣法草案已送到立法院審議。此一草案對於國內多年來農業推廣業務政出多門的積弊，已作了協調整合的規劃，但是長久以來我們過於偏重研究試驗、技術掛帥、輕視推廣工作的心態，很是令人擔憂。我們新技術示範、服務性的推廣工作，固然經常在做，如何使農村裡地方上居於領導的農民，養成自動自發精神，求新求變，還要去影響其他的農民；如何使社會大衆多了解農業，多支持農業，應該是農業推廣領域中最重要的環節，我們實在沒有理由予以漠視。

二、農業院校教授與教師是農業推廣教育新體制中所佈下的重要棋子。四所農業大專學校中，台大與興大的農學院教授人數大約要佔去四校總數百分之五十以上。崇道擔任中興大學校長期間始終主張農學院內部推動農業推廣，應該有專責的教授和行政人員，同時也需要農學院其他教授以其部份時間來參與。最近幾任的教育部長對於參與推廣工作的教授如何另定一套升等的辦法，也很表重視。過去的農復會，農發會和現在的農委會辦理金馬外島的農建計畫，雖然只有一個主辦人，但是一旦有了實際需要，全會各部門的同仁，都能動員支援。今天中興大學繼原有農業教育系被停辦之後，教育部核定設置農業推廣教育研究所，我個人誠懇地希望這個新的研究所不要走上專爲培養碩士研究生的老路，而是要有足夠的人員和預算，發生實質的作用，幫助院內其他學系的教授們把寶貴的實用的新知，經過適當的處理，變成爲淺顯易懂的信息，更要與各區改良場、農專、農校以及農、漁會充份聯繫，把實用的新知，傳播給農民。早在六、七年前的第一次全國農業會議中，與會的專家學者都一致認爲各區農業改良場應該試驗與推廣並重，而且還應該成爲各地區推廣資訊的集散中心。根據這項會議結論，區改良場的推廣課將要擴大爲推廣中心，人員的編制也將略有增加，但是爲了因應農業資訊必須大大加強傳播的需要，農業院校與各區農業改良場之間，人員的實質交流與互聘，可能是解決問題的另一途徑。儘管此種交流與互聘在實施之初，會有困難，但從長期規劃觀點來看，整合協調，分工合作，總比政出多門，各自爲政要好。屏東農專即將昇格爲農業技術學院，我希望新的技術學院對於農業推廣的功能，也會儘量加以強化。

三、現行的農職教育系統是高級農業（工）職校、五專、二專和農業技術學院。這個體系目前所面臨的升學主義的壓力很大。此種壓力固然不能完全阻擋，可是我們一定先要了解，農職教育的眞正目的是要針對農業、農民、農村的問題，培養解決這些問題的人才。近年以來農委會余主委一再强調今後農業應求生產、生活和生態的平衡發展，省府的連主席也宣告了農業應走向精緻化、企業化和生態化。行政院郝院長也認爲休閒農業應該大力倡導。可是我們的農業教育還在一生「生產」中打轉，其他二生「生活與生態」尚未眞正的注意到。如果我們農業教育體制中沒有傳播生活和生態改善的新資訊、農民怎能知道今後農業經營的新方向？社會大衆又怎能知道要如何愛護農業與支持農業？要使生產、生活和生態均衡發展，必須在農業區域綜合規劃上尋求落實，可是我們現在只有都市規劃，卻沒有農村規劃。歐洲如德國對於農村規劃非常重視、中央有國土綜合規劃，其下有區域規畫，再分爲都市規劃與農村規劃，基層則有實質的個案計畫，構成上下貫徹，橫向彼此配合，很值得我們省思與效法。至於我們所需要的現代化農業建設的人才，更是異常缺乏。最近教育部委託嘉義農專

所辦理的農村人力規劃調查，初步調查資料顯示我們農企業從業人員中，只有四分之一是農業院校的畢業生。今天我們農村之中，有農民和非農民，誰該負責培養青年農民從事三生平衡發展的農業經營，誰去指導非農民愛護農業，支援農業，無疑已成爲調整策進農業推廣與農業教育新體制過程中所面臨的最大挑戰之一。十一年前，當余玉賢先生出掌嘉義農專時，崇道曾以抱著辦黃埔軍校的精神，將嘉義農專建設爲爲農村地區培養優秀人才與幹部的搖籃相互期勉，這種培養農村基層建設人才的工作，還不能單靠嘉義農專的努力，各地農校也要全力配合跟進。如果農校都希望儘快升格爲農專，農專又爭取升格爲農業技術學院，一味地迎合升學主義的風氣，我們就不能不爲農業發展後繼無人而憂心忡忡了。我個人深深盼望我們現有的高級農業（工）職校都能成爲類似美國的社區學院，在學制和課程結構上都要作相當幅度的調整，切實配合三生的農業政策，先從訓練優良師資、充實教學設備做起，然後逐步做到農村需要何種新知和人才，農校就要開設相應的課程，舉辦切題的訓練。我們經常爲了基層推廣人員不足、素質不理想而感嘆，如果各地農校的老師，農專、農業技術學院和農學院的教授都能與各區農業改良場呵成一氣，透過農會推廣人員的居中聯繫策應，共同支援新穎實用的農業資訊傳播工作，目前農業建設人力不足以及基層人才無以爲繼的問題，才可望紓解，農民的盼望才可以得到滿足，這是我們必須有的共識，而且還要有舍我其誰的使命感，才能爲策進我國農業推廣教育新體制，開創一條康莊的大道。

四、談到農業職業教育，其本身固然具有幫助學生繼續升學與培養專業人才的雙重目的。如果我們對於後者能夠造就農業行政、農企業和各類技藝所需要的上、中、下層幹部讓畢業的學生各得其所，自然有助於遏止爲升學而升學的風氣，甚至於把升學當作是在職幹部提高其工作品質的途徑，那才是開發農村人力資源的最理想的境界，也克盡了農業職業教育應盡的責任。最近十幾年來，我們一直爲了建立農業大專院校農業推廣教授制度，擴大區農業改良場推廣人員編制，研擬新的農業推廣法草案，爭取在中興大學設置農業推廣教育研究所而努力，現在我們又爲了要使新成立的農業推廣教育研究所如何對於更合乎我們理想的農業推廣與農業教育新制度產生催化作用而舉辦研討會，可見我們大家都有抱負，都有共同的使命感，而且都在爲共同的理想，作點點滴滴的努力。不過崇道在這裡所要強調的是：一個好的社會體制，應該是各部門功能正常，又能發揮整體力量，相互構成一個有生命的有機體，絕不是各行其是，單兵作戰的格局。譬如一個農業改良場傳播農業資訊的電腦，必須與農林廳、農委會、各級農漁會、農業院校、各地批發市場、各試驗場所等相關機構聯線，才能發揮最佳的推廣教育功能。現在教育部的毛部長、農委會余主委、台灣省農林廳孫廳長、省教育廳陳廳長都有改革創新的決心，在他們的領導之下，我認爲此

時此地，正是我們大家同心協力爲農村培養更多優秀人才，提供更多更新資訊，提升農業生產力的最佳契機。我們不妨先選幾個農校，與農會、區改良場、農專、農學院聯成密切的資訊網，鼓勵年青的教師們爲農業科技下鄉，開發農業人力資源而與農民打成一片，展開整地播種的工作。我們可以先從最具實質意義的計畫做起，憑藉著先驅性計畫的成果，爭取更多財力與人力的支援，一步一步地去開創農業推廣與農業教育的新天地。

陳校長清義致歡迎詞

中央研究院李副院長、林技監、本校農學院李院長、各位貴賓、各位女士、各位先生：

本人十分高興參加「策進我國農業推廣教育新體制研討會」，首先代表中興大學全體師生向各位貴賓及參加的先生、女士表示熱烈的歡迎，並預祝研討會圓滿成功。

我們知道本省的農業發展在過去四十年，有明顯的改變，由過去傳統式的糧食生產，逐漸改變爲今日的精緻農業，不只是農業生產的目標有所改變，甚至農業經營方式、手段也必須配合改變，因此農業教育及推廣工作亦面臨一個新的轉變。我們必須要有一個新的觀念、新的方法來進行推廣及教育工作。一個從事農業教育及推廣的人員也必須調整本身的觀念，吸收新的知識及新的農業科學技能，才能符合時代的需求。爲了配合這些的要求，在李副院長、林技監全力鼎助、推動下，本校將於今年七月成立農業推廣教育研究所，給予本省從事農業推廣、農業教育的人員有進一步進修研究的機會。本人十分感謝他們二人的全力協助，並且也感謝美國密西根州立大學梅德思教授及麻薩諸塞州大學沈慕德教授，遠從美國來此協助本所的課程規劃。

今天在研究所未正式成立之前，能廣邀各位眞正從事農業推廣與教育的人員共濟一堂，提出各人的意見，對本校農業推廣研究所提供出發展的方向及途徑，眞是難能可貴，本人希望借重諸位寶貴的意見及本研討會的結論，將做爲今後本校農業推廣研究所發展的依據，也希望該所在本省未來農業推廣教育中擔任一個重要的角色。

此次研討會承蒙　教育部、農委會、省教育廳贊助，本校農學院李院長及全體同仁策劃辦理，備極辛勞，本人深表謝意。最後　謹祝各位參加研討會貴賓身體健康、萬事如意。　謝謝！

李院長成章開幕致詞

陳校長、中央研究院李副院長、各位貴賓、各位女士、各位先生：

承蒙各位撥冗前來參加“策進我國農業推廣教育新體制”研討會，對本校新成立之農業推廣教育研究所提供智慧的建議與批評，本人謹代表中興大學農學院全體同仁表示誠摯的歡迎。

近年來，我國農村由於勞力結構的改變，農村青年務農的意願低落，加上科技的進步日新月異，使得農校教育與農業推廣工作益形重要。

本校自民國四十四年成立之農業教育系，到七十年停招，農校師資培育之管道因之中斷，農業推廣人員之進修訓練，也受到影響。本校有鑑於人才的培育，首重師資的培育，加上李副院長多年來長期的關懷，本校於去年開始籌劃申請成立“農業推廣教育研究所”，承蒙李副院長的多方關照，以及本院同仁，包括楊總幹事策群教授等多位同仁的努力，今年奉教育部核准設立。所以研究所的成立，李副院長可以說是居功厥偉，本人特別要代表中興大學農學院，向李副院長表示衷心感謝。

如今研究所草創，承蒙李副院長的美意，指示召開研討會。這段期間，承蒙農委會林技監世同的多方奔走，美國梅德思、沈慕德兩位教授以及本院同仁的多方協助。並承蒙教育部、農委會、臺灣省教育廳，以及本校陳校長慨允補助經費，使得研討會得以順利召開，本人特別在此申致謝忱。

農業推廣教育研究所的學生來源主要爲農業學校之教師、農業試驗推廣機構包括改良場、農會之推廣人員，以及一般農業技術人員，其教育目標在培育高級農業推廣人才，教育內容則以農業生產技術及社會行爲各佔一半之平衡發展爲目標，希望學生具備農業知識之技能，並學習教育、推廣及傳播之方法，以資教育基層農業人員，並及於一般農民，這是農業推廣教育研究所的初步教育目標。進一步則希望藉由研究所的設立，能進一步結合學術界、農業行政及技術人員的力量，策進我國農業推廣走向一個更健全、更進步、更能有效進行農業科技傳輸的新體制。

今明兩天，研討會的分組討論，我誠懇的請求與會的貴賓，能夠毫無保留，知無不言，言無不盡，提供中興大學農業推廣教育研究所將來努力的方向和重點。也期望我國農業推廣的新體制，能在各位貴賓的智慧與經驗的建言之下，得以成功地建立一個完善的基礎。

最後敬祝各位貴賓身心健康、萬事如意。

行政院農業委員會洪參事筆鋒代表余主任委員致詞

陳校長、李副院長、農學院李院長、各位貴賓、各位女士、各位先生：

今天中興大學舉辦我國農業推廣教育新體制研討會，余主委在台北因另有要公待理，特地派筆鋒代表他到這裡的開幕式中向各位致意。

各位可能在最近幾個月中從傳播媒體中常常聽到或看到本會余主委一再強調農業是「三生」一體的事業，所謂「三生」，就是生產、生活、生態。余主委認爲今後台灣的農業，應該在生產、生活和生態等三方面兼籌並顧、平衡發展。從今年七月起，農業部門將配合國家建設六年計畫，推動「農業綜合調整方案」，而這個方案的基本精神便是發展生產、生活和生態作爲整體考量的農業，除了必須謀求提升農業生產效率，增加農民所得外，更要改善農村生活環境，發揮農業在生態環境的保育功能。

農政機關爲了推動今後六年的「農業綜合調整方案」，需要傳播更多更新穎實用的資訊，我們非常樂意見到在「農業綜合調整方案」推動之前，我們新的「農業推廣法草案」已經被送到立法院去審議。我們也非常高興地見到中興大學也恰好在「農業綜合方案」推動之前，奉准設立農業推廣教育研究所。更使我們感到鼓舞的是：中興大學新設的農業推廣教育研究所不是僅僅爲了培養一批批的研究生以及從事各種有關農業推廣與農業教育的專題研究，而且也要爲高級農業(工)職校教師，各級農業推廣人員以及核心農民的在職訓練加强服務。這次的研討會就是爲了廣徵學者專家的意見，找出當前農業問題的應興革事項，尋求那些是農民的眞正的需要，那些新知識是過去所疏忽的，那些新技術是農民應該知道但是還不知道的，那些舊的觀念是應該拋棄的，那些新觀念是應該吸收與建立的。相信以各位學者專家的智慧，對於這些問題，一定會提出具有實質意義的結論，作爲今後農業推廣教育研究所在招生、課程之安排、研究專題之選擇及工作發展上的重要參考。農業行政本來就應該與農業學術以及農業推廣教育密切協調合作，今天的研討會有三方面的專家學者參與，就是彼此密切配合的象徵與開始，大家建立共識，爲我們農業創造更好的明天，預祝此次研討會成功，各位身心健康愉快。謝謝。

第一部份

專　題　報　告

中興大學農業推廣工作簡報

國立中興大學農業推廣委員會

楊策群

國立中興大學農學院農業推廣委員會(以下簡稱本會)創立於民國五十三年，開創國內大學從事農業推廣實務的先河。初期經費主由中國農村復興聯合委員會補助，用人行事均屬計劃性質。在總幹事下有聯絡員數人，由相關各系遴派講師或助教擔任。民國六十四年本會奉准納入本校組織，民國七十年教育部指示各公立大學農學院及農業專科學校設置農業推廣委員會，遂有推廣教授之設置。

本會設置委員九至十五人，農學院院長爲主任委員，餘由相關系所主任及農推會總幹事組成，推廣教授則由相關系所教師兼任。農推會與農學院各系所教師保持密切連繫，使教學、研究、推廣密切結合，學用合一，相輔相成。本會之業務可大別爲下列四項：一、開發、協調與執行各種農業推廣發展計劃。二、辦理研討會、籌畫推廣課程及講習訓練事宜。三、技術支援改良場和農會等基層農業推廣單位，發展農業推廣業務，解決農民遭遇的疑難技術問題。四、出版農業推廣書刊，發展推廣資訊。茲將以往重要工作簡述於後。

民國五十四年二月發行「農業推廣參考資料」(創刊號)，每月發行一期，內容包含農業新知介紹，農業技術提供及農友疑難問題解答等。免費贈送各農業學校、農改場、各級農會及農友參閱。至民國七十年二月止共發行了一九二期。同年六月農業推廣參考資料改以彩色版不定期發行，迄民國七十三年十一月止前後歷時十九年又九個月，共計發行了二一二期，深獲各界好評。民國七十五年六月發行「興大農業」，篇幅增加，配合彩色圖片說明，給讀者帶來了更多的閱讀興趣。

本會在五十三年成立後由農復會(農委會之前身)經費補助辦理「台中地區農業經濟發展試驗計劃」，推動教授下鄉從事推廣實務。內容包括：(一)舉辦農業生產技術講習：透過鄉鎮農會配合舉辦有關農業之講習訓練，如作物保護，施肥與栽培管理技術等。(二)編印推廣小冊，將本校研究成果推廣給農友實地應用：如香蕉象鼻蟲之防除(貢穀紳教授)，大豆根瘤菌(吳敏慧教授)，大豆新品種(盧英權教授)等。(三)協助解決農業技術疑難問題，邀請本校相關教師下鄉，除協助解決農友之疑難問題外並作現場示範指導。

民國六十五年七月至六十八年六月與美國亞洲協會中華民國分會合作辦理「台灣中部地區農村生活改善技術指導計劃」，工作地區爲台中縣神岡鄉、大里鄉及彰化縣伸港鄉、芬園鄉。以農業生產技術協助該地區改善農民生活。同時在民國六十六年十二月與台中區農業改良場合作成立農業技術諮詢服務小組，由本校農學院院長及台中區農改場場長爲召集人，依技術諮詢服務性質又分爲糧食作物、園藝作物、畜牧獸醫、植物保護、農場經營等五個小組，利用農閒期至中部地區各鄉鎮實施巡迴訪問並舉行座談會，與農民面對面的交換意見，了解農民農業技術及困難所在，採取當場答覆或以書面及專案處理等方式，解決農業上的疑難問題。

在農業推廣教育訓練方面，本會自成立以後即經常在中部四縣市各鄉鎮實地訪問並了解農友之需要，邀請本校農學院相關老師會同於晚間下鄉至各農事研究班講解或回答農友所需之農業科技及其遭遇之疑難問題，頗獲農友們之歡迎。民國六十一年二月接受台灣省政府農林廳委託辦理各級農會在職農業推廣人員進修班(專班)爲期四個月。目前該班學員多人已爲農會之領導人員。由於辦理該班很成功，自民國六十二年起每年由農林廳選送各農會優秀推廣人員二至六名至本校農學院大學部選修相關課程進修一年。目前更有進修同學期滿後再考上農學院研究所繼續進修攻讀碩士學位，爲在職農業從業人員開闢了一條新的進修管道。此外並接受各單位委託辦理各類短期、中長期之訓練班甚多，重要的有：(一)台灣省農會委託辦理核心青年農民農業專業訓練班，包括果樹栽培訓練班兩班，蔬菜、花卉訓練班各一班(七十三年)，菇類栽培管理班三班(七十四年)。班員結業返鄉後大部分均在當地創業，且很多班員現在事業已卓然有成。(二)教育部委託辦理農專農職教師暑期進修班，於民國六十九年暑期開始，利用暑期連續辦理四年，班別有作物生產、植物保護、食品加工、森林水保、畜牧獸醫及農業機械六科。(三)與台灣糖業公司建教合作辦理「台糖農務專業人員進修班」。該班學員五十名，自七十三年九月份起分四學期進修，每學期十六週，於七十五年元月三十一日全部結束。由於到訓學員在校期間勤奮向學，結業時全體學員均順利通過。目前已成爲台糖農務方面的主幹。最近正在規畫各種短期訓練課程，結業後發給證書，預定於八十年度辦理。

在推廣發展計畫方面，最近二年正在積極推動中。例如在台中縣神崗鄉指導農民在紅土栽培木瓜，木瓜毒素病發病率甚低，在雨季過後仍可生產高品質木瓜，農民獲利甚豐。舉辦木瓜栽培技術觀摩會時，參加農民十分踴躍。除了栽培木瓜外，並在南投縣名間鄉輔導農民栽培夏季蔬菜，包括番茄、青椒、蓋等。其中引介新開發各種技術，包括根據土壤與氣候特性進行區域規畫，深層翻土，石灰施用，灌溉，及根系訓練等技術。在苦瓜方面，本會開發苦瓜嫁接技術，頗受農民歡迎，因此特舉辦苦瓜嫁接技術講習。上列各項推廣工作，替農民創造高利潤誘因，使更多農村青年，加入農業生產行列。

在農業資訊的開發方面，目前正在進行下列工作：(一)開發農業地理資訊，推廣地理座標之應用。目前農業試驗與調查資料，缺乏詳細地理位置的記載。這是由於一般人不會使用地圖，也不知道有那些地圖可供使用。事實上，土壤圖、地形圖，和生產力分級圖，不但提供了座標系統，也指出土壤和環境特性。從事農業的各種人員，必須熟悉此項資訊。(二)按照區域土壤、氣候與水文特性，試行規畫園藝作物的發展區域。前述紅土栽培木瓜和蔬菜，就是根據此項規劃進行推廣試驗。(三)土壤改良與作物栽培綜合指導系統的開發。許多土壤，即使有充足的灌溉和肥料，也不能保證有良好的收成，必須予以改良，並須根據至少150cm深度內的土壤特性爲之，一般農民無此認識，造成肥料、農藥，和灌溉水的浪費。本會目前正在試驗建立一個綜合的指導系統，使土地的生產力大幅提高，並增加生產效率。

本會深切體驗，大學的推廣工作，應具備不斷創新開發的特質。大學的教師，是最有價值的推廣資源。農業推廣委員會要能運用這些推廣資源，來協助政府，發展農業。

農業推廣教育研究所的考驗：研究生應具備的幾項特質

美國密西根州立大學農業推廣教育系

梅德思教授

早安！很榮幸能參與這次會議，和各位一起討論農業推廣教育研究所的性質和展望。

1961年我第一次訪臺迄今，台灣有很多的改變，30年前，我在省立農學院時代擔任兩年密西根州立大學小組的指導教授，對於密西根州立大學和中興大學農學院課程、研究和推廣的合作均不遺餘力予以協助。

當時我太太和我就住在校園東邊隔一條馬路的地方，路盡頭靠近南邊住宅區旁有一個大的無加蓋排水溝，馬路和校園間有一小塊稻田，我們看見農夫用水牛犁田、親手插苗、除草，最後親手收割和打穀。

台灣生產稻米的技術改變極大，台灣省立中興大學也進步擴展變成國立中興大學。台灣大學也有顯著的改變，Wyeth和Ferver博士等協助創立的台大農業推廣系已有很多畢業生、研究報告、和研究所的課程，且均有所成就。

興大農業教育系經27年的農業職校課程後，於1983年暫告停辦。今天早上，我只針對我認爲重要的幾點來討論這個興大的新研究所。這幾個重點只環繞一個問題打轉，那就是此研究所研究生的特質究竟爲何?

只針對這幾點很難涵蓋新研究所應注意的重要特質，研究所課程、研究、在職訓練、農業師資證明和農業行政課程是主要目標。

也許我能將這五個目標串聯成一個問題：研究生的特質是什麼?

研究生應具備的特質

研究生應具意願和能力

我們可給研究生一個廣泛一點的定義，其中包括了具碩士學位者，受過在職訓練者，取得證書和修讀過教育行政課程的人。

值得我們注意的，研究所需具備多樣性的課程，而這些課程都是重要而適切的

，我們很容易僵化在研究生最重視的即爲取得碩士學位，碩士學位的取得固然重要，但只是五個議題中之一個議題。

選擇具意願和能力的研究生和教學課程、教學品質及整個研究所都有關。

然而，如果“傑出”只是由成績唸得好來定義的話，研究所招生的“精英制”就不是我認爲最重要的，紮實的學問有其重要性，但絕不是唯一的甄選標準。

甄選學生考慮的因素爲將來能服務人群，選擇主修農業管理的學生時，則要偏重於創造力、適應力、社區領導人，及對社區有貢獻的人，而不只是一個課業成績很好的人而已。

理想的研究生應該願意，能夠做什麼呢？首先，我們要分別願意做和能夠做這兩點——**服務意願　服務能力**。

具有服務意願

進修碩士學位的學生必須願意爲提升鄉村生活品質而從事不同的工作，更高的教育會幫助學生開啓更多工作機會的大門。我們也深願他們願意從事與農業教育推廣有關的協調、督查及行政工作。

有很多因素影響研究生的就業，但可確定地，我們所開課程之一必須幫助學生願意從事和農業推廣教育有關的工作。

態度是一種心態。有人說態度是可以體會而無法教導，就如同痲疹，你只有會“得”到它。研究所老師的心態對學生是否願意爲人服務具有關鍵性的影響力。

服務的態度—願意盡己力幫助別人，和願意服務的態度有密切的關聯。我們希望有這麼一次，當社會上有多數人說“這件事對我有何好處？”時，我們的學生說“這件事我能幫什麼忙？”

研究生應具冒險精神。我們知道將來對職業農校的需要會有所改變，大部分的改變會在推廣方面課程的增加。我們現在所看到農業職校的定位會逐漸改變，在農業教育推廣這方面，我們需要能面對挑戰和改變的領導者來幫我們開新課程、評估課程，使課程更有效果。

具有服務能力

台灣過去五年的改變令人驚嘆！一些改變已跳出傳統的模式。舉例來說，農人可根據供需情況、價格來決定他們的生產情形，而較少仰賴政府。

要達到這個目標，我們需要具有和生產者密切合作的能力，並需將此概念清楚

地灌輸給研究者和政府有關人員。研究生需具備領導技巧。這方面的技巧可經課程學得，但學生仍需具有基本的領導能力。

計劃、組織、指導教育課程對教師和推廣工作者而言，應列於第一順位，具備了領導能力將使這些人和其他教師、行政人員、推廣工作者、相關教育工作者更易合作。但是他們必須熟知與認知、感性、學習技巧相關的概念。

參加在職訓練的研究生需具備豐富的新知識和技術，並需具有和他人分享知識與技術的經驗。

這些所需的技術應能讓研究生分析在某一狀況下那些課程是必要的，研究生應對農業範疇有廣泛的瞭解，但並不需成爲某一技術領域方面的專家，他的專業知識應著重於教育方面。

研究生應有能力很快地鑑定出有效的教育課程所需的主要成分爲何，且能技巧地和共事者溝通。

在和別人共同計劃課程時，研究生應該能夠變通。分辨做計劃的過程和實質是很重要的，教育者需具備足夠的知識，以針對參與者切身需求安排適當的課程細節與目標。

結　　論

農業推廣教育研究所的設立是國立中興大學一項新的挑戰，此研究所仍需政府不同單位和其他相關研究所的合作。

也許，目前最大的挑戰是選擇研究所的教師，好的教師才能有好的研究所。

在密西根州立大學，農業推廣教育系的教員們在我訪台之前特別提及，他們繼續熱切地關心你們的成功。我相信這些教師願意也能夠協助你們達成目標。在這過程中，他們也期盼能由台灣的開發過程這一例證中吸取更多的經驗。

現在，校園東邊的路不再爲溪流所阻隔，一座橋和四線道的公路已可四通八達，排水溝早已填平，小稻田也已不見了，1961～1962時我們沒預期到這些變化，今天我們同樣地也不能預期明天的研究所和社會的實況。

希望經由我們的合作，可創造美好的明天。謝謝！

（本文由陳久講師翻譯）

美國農業教育之演變趨勢與台灣農業教育之展望

美國麻薩諸塞州大學農業教育系主任
國立中興大學客座教授

沈慕德博士

引　　言

距本人來台從事博士論文研究轉眼已歷23年矣，想當年，本人師事梅德思博士，梅博士任教於密西根州大，指導我的博士論文，本人的研究題目是「台灣普通高中及高農畢業生務農績效之比較」。非常高興能再度來台，略盡心力爲農業推廣教育研究所催生，並且和梅德思博士及此間關心提升台灣農業教育的各方俊彥再度共事。

過去二十年來，我儘量收集了解台灣農業教育的發展情況，主要的資訊來自梅德思博士的研究成果。而過去兩個月期間，我更是不斷蒐集台灣農業教育的最新現況，並瞭解農業推廣教育研究所成立情形。

本人致力農業推廣教育將屆滿30年，大半的時間任教於麻州大學，自1968年在台灣七個月的工作經驗後，前後大約花了五年的時間在國際的專業任務——主要在規劃和發展農教人員養成的機構。此外，本人認爲農業教育應包括師資的養成（正式職校體制）以及推廣人員的培育（非正式的教育體制），我的這篇報告即著重於討論農業教育對二者有直接影響的各種觀點，並探討二者間的平衡。

美國農業教育的趨勢

美國農教師資的培育課程於1907年創始於麻省農業學院（現爲麻州大學），一次大戰期間，美國國會制定了二個法案，授權聯邦資助農業教育，第一項法案是1914年Smith-Lever法案，提供經費輔助推廣教育（成立合作推廣局），第二項是1917年Smith-Hughes法案，提供聯邦經費資助農業職業教育（含家庭經濟），兩法案都有條款規定在各自的範圍內培養專業人員。此外，我必須提到麻省農學院主席Kenyon L. Butterfield博士致力於要求國會的推廣教育和行之有年的Land-grant

學院結合。同時，麻州的四所高級農業職(工)學校更被視爲Smith-Hughes法案的模範，其中三所初中是郡立農校，類似台灣高農，更值得一提的是，三所學校迄今在美國仍十分特殊的是在同個校區內並存職校和推廣教育服務，校長同時也是郡推廣業務的領導人。以上所述是麻州早期在美國職邦立法中支持農業教育所扮演的角色，本人嘮叨這些令人生厭的歷史陳蹟，主要是爲以下的說明提供分析的根據。

在美國，職校課程得立法支持以便訓練農民有更專業的素養，這些職校過去僅著重於15歲以上的男孩或成人，而其教育課程亦僅侷限於農業生產或農事上。1965年的職校教育法案影響職教甚鉅，基本上該法案是要打破各職校課程範圍過於偏狹的各種規定，比如農職教育，著眼於農業教育的非農場觀念，同時也鼓勵女學生選讀往例全由男學生選修的教育課程。過去二十五年來，美國職業農校的領域發生了一些觀念上的改變，但是最大的影響來自於國家研究評議會，近年來該會曾對初級農校教育做爲期三年的研究，並於1988年以“了解農業：教育的新方向”爲題發表專文。這項研究對美國日益減輕的獲利能力及國際競爭力，以及農業教育課程、品質、內容及修課人數日減等現象討論甚多，因此被廣泛運用。俟本人先以非正式觀點回顧農業或推廣教育的趨勢後，再總結該會對農業師資教育課程的有關研究。

美國推廣教育之沿革

1914年成立合作推廣制度，就如合作推廣局一般，是一個公家出資非正式的教育制度，連接美國農業部74所Land-grant大學及3150所郡立管理單位（推廣局）的教學、研究資源和活動的制度，該制度一向使其課程符合農民、家庭和社區的需要，雖然其課程傾向農村人口，但都市課程也在許多重要地區推行，並且極爲成功，四分之三個世紀以來，教育是該制度最重要的一項功能。這也使得一個甚爲特殊合夥業務—連繫郡立推廣機構和Land-grant大學的研究—可能提供一個有效的非正式教育制度，對大衆提供解決問題的服務。

自二次大戰後，約每隔十年合作推廣局就會自我檢查本身的組織結構和課程，並建議改革以維持其功能，此外，雖然過去推廣以長於分析個人及團體活動，令人印象深刻，若不在任務、組織結構及課程上適度變革，其遠景令人憂慮。目前美國農業推廣教育危機四伏，甚至比職校教育（似正式教育）改革來得嚴重，但無論如何，二者都面對改革的巨大壓力。

八十年代教育改革的需要

直到八十年代，似乎美國負責推廣及職校教育的專門農教人員都很滿意，認爲

專業素養頗受保護。長久以來，這兩類的專業人員都認爲既然其教育制度很早就獲得政府起碼的支持，其課程是好的，以人爲導向的，那麼只要工作努力，照政府之意辦事，就可得到政府和社會的充分支持，但情況卻非如此，事實上，二者都因過於重管理而輕領導，安於現況，怠於創新、遭人詬病，簡言之，就是重視如何將事情做好，而非做該做的事。讓我們回顧八十年代發生的改變是如何對所謂有價值的專業人員及組織形成壓力。

國家研究會(Notional Research Council）分析八十年代美國的農業和教育面臨許多挑戰如下：

人口統計，都市化、世界性農業產能的急遽增加，國內農場和貿易政策，生命循環的改變，基礎和高科技產業的全球性競爭、日益精密的電腦引起的知識爆炸，數位設備、生物科技、職業的專門化、大衆對學校角色的期望、食物供給及大衆教育等等。

除此之外，在八十年代末和九十年代期間，包含在政治議程的倘有教育、環境污染、經濟衰退和伴隨的不穩定情況，上述的因素和實際影響台灣農業和教育的因素是否有所不同？

農業教育須做何改變？

某些研究在八十年代末期完成，提供美國許多增進農業教育的建議。近年來，農業推廣和職教的改革已明白揭露某些趨勢，諸如：

1. 七十年代和八十年代期間，某些農業師資教育，課程從教育學院轉移到農學院，以便於技術的支援，目前，大約有四分之三的類似課程安排在農學院。
2. 在同一期間，農業推廣及農業教育工作人員不斷發現他們面臨相同的外在問題，因而加強了這二個團體的聯繫，目前九所主要的Land-grant大學正式承認農教系下設的推廣教育爲農業和推廣的教育單位。大約八十個其他科系，多少都假定這種雙重責任爲農業師資教育的一部分。不論就觀念和實際應用上而言，推廣人員和教師都非常需要補充專業的教育課程。
3. 近年來，農推系正擴充各方面的課程，諸如農業溝通、國際農業教育、一般農業研究，以及推廣教育和職教師資教育。以允許農推系在各種活動、師資，及在應用行爲、科學的專業人員的養成上有較大的彈性。

美國國家研究委員會 (NRC) 在歷經三年的初中農教研究後，對農業師範教育提出以下建議：

1. 師資養成課程應持續應用到教學上，但更應強化科學工程、經濟、農業、行銷、

管理、國際農業及公共政策。

2. 聯邦政府及小學、初中的農教老師應該致力發展改進並找出方法，將實驗室的知識傳授到高中課堂上，這些新方法應强調傳授農業行銷和管理、科學的原則，公共政策及國際農業。
3. 農業教師應與農學院和教育學院建立合作關係共同辦理推廣事務，及與私人機構建立正式的合作管道，俾使發展新的服務課程，提供教師和管理者機會。
4. 農學院應加强課程的改革，開發新的教材、課目和新的服務教育課程、美國農業部應鼓勵農學院達成目標。
5. 農業教師應和其他學院，比如科學教育、企管及教育工程方面的專家，建立較好的合作關係。
6. 農學院應鼓勵並招收有天份的學生加入教師行列，農教系並應開發課程，通知學校顧問有關於專門農業教育人員的就業機會。

經過一年的研究，組織政策擴展委員會(ECOP)於1987年發表了一篇報告，名爲"過渡期的推廣"，搭建理想和實際的橋樑。至少有兩種不同的建議點明了推廣人員需要的教育訓練。

1. 郡級農業推廣人員需要接受再教育，而這些教育課程中所培養的技術必須能符合當地特性的需求。也就是說，農推人員需接受一系列的嚴格訓練、規劃以及人際關係協調能力的訓練。
2. 說得更詳細點，農推人員需要接受下列訓練：
   —策略規劃
   —學科間協調規劃
   —工作網和職盟的建立
   —課程傳輸和溝通
   —專業管理
   —能採納意見並加以規劃
3. 這篇報告也提到這些專業人員應該被塑造爲管理人員或教育人員，亦即能夠有效地管理、運用相關資訊，以便能爲當地居民和社區解決問題，教育的功能是解決問題，而不是單純的知識傳授。未來的推廣人員必須被教育成能對人力資本做正面的回應，並且有效地使用科技。

對台灣和農業推廣教育研究所的啓示

自從1983年中興大學農教系停止招生後，台灣就一直沒有正式的農業教育人才培養計劃，而高農師資的來源也急遽銳減，導致農業師資的老化，而屆此農業教育

和技術快速發展的時候，師資來源的缺乏也使得農業推廣服務大幅減少，農業教育人員的士氣也因而受到打擊。在台灣因爲農業教育師資培養中斷，因此這些農校老師們也就無法接受深造教育或提供研究發展的機會。現在，教育部核准農業推廣教育研究所成立，國立中興大學有機會再度在農業教育的領域裡有所作爲。

在建立新研究所之際，我們可從美國的發展經驗中獲取一些體驗與原則：

1. 政府可對於新設立的教學課程制定相關的法律及提供適當的支援。但是一旦正式實施後，這些課程需要強有力的領導，始能經得起時間的挑戰，舉例來說，儘管麻州在農業課程的發展上扮演著先驅者的角色，並且影響了法律的制定。但是，時至今日，麻州的農業教育課程處於嚴重經濟衰退的情形下，已面臨無法運作的窘境。在過去三年之中，麻州合作擴展系統的預算已遭到鉅大的削減，也使得系統的延伸—教學課程亦受到影響。
2. 農業教育課程需要持續的檢查與修正以符合社會不斷改變的需求。台灣與美國的人口正持續地向都市集中，因此，農業教育課程必須反映此種人口地理上的變遷，都市農業企業化的興起所產生的問題，也不放棄反映鄉村農業的需求。爲達到上述各方面的要求，農業推廣課程必須在內容上朝多樣化及豐富化邁進。
3. 由於農業教育的基礎植基於科技，因此重點在於求得學術界、一般大衆、農業產業，及政治領導階層對此一課程的目標及其貢獻之共識，農業是一種專門的領域，專業教育人士及農業科學人士對此並不甚了解，農業教育者需要優良的人際關係、溝通技巧、農業經營、農學科學背景，同時對於台灣及世界各國有關農業的組成成份有一通盤的瞭解。
4. 農業教育具有正式及非正式兩種層面，在實際運作上，此二層面有密切相關。農業推廣研究所的設施及規模必須能反映在推廣及職業教育兩方面的專長，並有足夠的深度發揮農推所設立草案所列的功能，即使目前師範教育法限制初中師資只限於在三所師範大學完成教育學分課程，農推所也同時必須開始考慮培育農業教育師資，以發揮農推所的功能。

除了美國的趨勢給台灣的啓示之外，我引用梅博士一年前在台北提出的三點建議，每點建議對於準備執業者和農推所的相關功能都有啓示。

1. 職教應爲青年人及成人著想，集中於農業和自然資源教育，應包括農業教育及和農業有關的教育。
2. 職校的教師和管理者應該提供機會給農業教育做研究，並且提供參與在職教育的機會。梅教授建議新的研究所應能提供推廣教育及研究的領導權並發揮其他的功能。
3. 應藉由推廣高中後的系統教育及管理來促進青年農民的教育課程，其他的農民教育應和農民組織及區農業改良場繼續合作。

讓我藉這次機會感謝諸位邀我參加此工作並對農推所之設立提供建議。台灣和中興大學正在成長和發展中，農業推廣教育研究所有潛力成爲農學院中應用科學的原動力，以及台灣農業教育變革和創新的偉大催化者，由於你們的支持，農業推廣教育研究所定可發揮這些潛能，現在歡迎各位提出問題或建言。

（本文由陳久講師翻譯）

第二部份

分　組　討　論

議題討論與建議

第一議題：開設農業推廣教育碩士學位課程

指導員：謝快樂教授

重點說明：國立中興大學農業推廣教育研究所將自八十學年度起爲有志從事農業訓練與推廣工作或擔任高級農業(工)職校教師之推廣人員及大學農業院校相關科系畢業生開設與農業推廣教育有關之課程，除應符合教育部之規定外，並依據以下各點原則授予農業推廣教育碩士學位：

1. 此種碩士學位並非純爲學術研究而設，而是爲了提升農業推廣與農業教育從業人員之素質，增進其領導才能。

2. 學生之甄選：
   ⑴參加農業推廣教育研究所入學考試及格，但以已擔任農校教師或農業推廣人員至少滿三年者爲優先。
   ⑵至少獲有與農科教學或農業推廣工作相關學系之學士學位。
   ⑶有志於獲得碩士後繼續在農職教育或推廣教學或農業行政與督導的崗位上服務者。

3. 開設之課程：
   ⑴所開課程分成下列六個重點領域：
      a. 農業推廣教育行政及督導。
      b. 青年與成年學習心理。
      c. 課程設計（包括教學與教材）。
      d. 農業資訊傳播與領導才能培育。
      e. 計畫設計與考評。
      f. 農業推廣教育之研究。
   ⑵所開課程不僅供農業推廣教育研究所學生修習，也可供其他相關研究所研究生選修。

4. 碩士學位授予之條件：
   ⑴研究生在核定的研修課程下至少修滿三十個學分，包括下列各種組合：

a.主修課程 —— 十八學分。
b.輔修課程 —— 六學分（學生可申請獲准選修其他農學院各研究所及各系高年級所開課程）。
c.畢業論文 —— 六學分。

(2)修完前列課程後須通過「學科考試」。

(3)完成課程與畢業論文所需時間不得少於兩年，最多得展延爲四年。如果研究生兼任研究助理，完成課業與畢業論文所需時間不得少於三年，最多得延長爲五年。

5.實驗

在教授指導之下，研究生應有充份時間就所修課程的基本原理，加以實驗。部份課程，可透過合作協定，由研究生參與農業改良場或高級農業(工)職校所推動的推廣計畫，作爲實驗。

此外，農業推廣教育研究所應提供場所，購置設備，使研究生得以參與製作錄影帶、幻燈片。資料電腦分析、計畫設計與執行之電腦建檔工作。

6.專題研究

研究生原則上應選擇農校教師或推廣工作從業人員所面臨之問題，或決策階層、行政人員與督導人員所指認之問題作爲畢業論文的研究題目。研究生也因爲要嘗試新的教學或新的考評方法而選定畢業論文的研究題目。

一般言之，畢業論文的研究專題，應以印證已知的原理作爲依據，或以行動、實用爲導向，不論屬於何種情況、研究生所研擬的畢業論文題目，須獲得其指導教授之認可。

7.圖書設備

中、英文之書籍、期刊及相關參考資料均應隨時購買，供教授與學生使用。

問題討論：

1.每年報考農業推廣教育研究所攻讀碩士的預計人數有多少?

(1)正確預估，最好做問卷調查。

(2)報考人可能來自改良場、農會、高職農工。

(3)若能留職留薪來進修，報考意願會更高，目前，對於留職留薪的期限並無統一規定。

(4)除筆試外，最好加上口試、推薦信和進修計劃書。

(5)推薦信最好統一格式化。

(6)進修計劃書應包括此計劃和工作中所遇難題有何關係。

(7)口試時應決定其進修計劃的可行性，應考生的意願及態度。

(8)從事推廣教育工作的優秀人員應給予優先機會。
(9)錄取標準爲　筆試—40%
口試、推薦信、進修計劃和其他因素—60%
(10)在職進修名額應多於一般生。

2.獲得農業推廣教育碩士者，就業機會的前景如何?
(1)在職人員來進修後，再回原單位服務應無問題。
(2)學員進修結束，回到原先工作崗位上，有些人會因表現好而升職。
(3)可能就業範圍廣，因此較少的研究生願意從事基層性的工作。
(4)在各農校成立農業推廣委員會，增加就業機會。

3.在培育農業推廣教育碩士所開列的各項重點中，您認爲那些是最合你的心意?
(1)有關專技課程和行爲科學課程之比例，見仁見智，有的主張行爲科學和專技課程比例爲2：1，有的主張1：1。
(2)課程强調：
第一、規劃發展，第二、課程評估，第三、資訊傳播，第四、領導人才的培訓，第五、教學方法，第六、課程發展和內容的準備(以上所列並不完全)。

4.在培育農業推廣教育碩士所開列的各項重點中，那些需要加强? 如何加强?
〔對於這個問題與會人士沒有建議〕

5.請指出當今農業推廣與農業教育從業人員所面臨的問題中，那些問題可作爲碩士候選人適當的畢業論文研究題目?
(1)農業問題之解決以及能提高農民所得的相關農業問題。
(2)產銷平衡問題。
(3)推廣精緻農作物之問題。
(4)農業推廣體制改進之問題。
(5)推廣人力需求方面之分析。
(6)短期講習班對學員生產力加强之評估。
(7)現階段農業推廣教育問題。
(8)推廣教育方法。
(9)有效之推廣組織方案。

6.請指出其他應考慮的困難，意見與課題。
如何串連目前之推廣體系?

第二議題：加強農業推廣教育專題研究

指導員：楊策群教授

重點說明：國立中興大學農業推廣教育研究所除將自八十學年度起爲有志從事農業訓練與推廣工作或擔任農業(工)職校教師之推廣人員及大學農業院校相關科系畢業生開設與農業推廣教育有關之課程外，並擬將專題研究列爲該所重點工作之一。其目的在於加強目前國內農業推廣教育體制的研究基礎。

1.專題研究之種類：

農業推廣教育研究所教授之專題研究以實用與行動爲導向，並鼓勵研究所內研究生與助教之參與。教授各自認定其研究之興趣與專長領域，同時參照外界所提供的意見，擇定研究之題目。審視當前所存在的問題，暫將專題研究分爲十個類別：

2.目前那些是影響台灣地區人民（兒童與成年人）與農業最困擾的問題?

3.農業推廣教育研究所所擬從事專題研究的原則已如前述，您認爲可能遭遇那些問題? 請逐一列舉，並就其解決的途徑，提供建議。

4.目前台灣地區農業推廣與農業教育從業人員所面臨的問題中那些應由農業推廣教育研究所的優先進行專題研究?

〔以上問題於第二議題中提出，下列爲與會者所提之建議〕

⑴研究主題分爲兩方面—人文和技術，此兩方面都和行政瓶頸有關。在這兩方的研究都會對推廣行政有幫助。

⑵研究經費來源

a.由研究所提供

b.可由教育部，台灣省政府教育廳，台灣省政府農林廳提供

c.由其他研究機構提供

⑶研究範圍

a.農業教育

①農業職(工)學校課程的改進

②農業職(工)學校畢業生的就業調查

③農業(工)職學校學習動機

④現階段新主題

⑤新主題(新領域)的教學材料

b.農場經營，包括生產和行銷
①安全使用農化物之教育
②成功農場經營之個案研究
③多種組合的農業企業和不同大小農場之研究
④經社會價值觀探討農業問題
c.社區、環境、農村和農民
①鄉村社區美化
②農村規劃
③農村家庭教育
④農村都市化問題
⑤農村環境影響評估
⑥從技術和經濟觀點來看區域農業生產計劃和社會教育影響關聯性
⑦農業災害研究（颱風、地震等）（註：這是保險課程所需額外考慮）
⑧經由多重選擇來增加農民收入
⑨農業污染問題及環境保護問題
d.行政和推廣制度
①更新和增進四健會教育
②推廣專業人才的投入
③農業推廣體系整合的改進
④建立農產品供給，服務證照制度
⑤推廣農業職(工)學校農場經營教育的需要
a)行政、督導
b)農民教育
c)考　　評
d)教學、學習
e)溝　　通
f)教　　材
g)體制與角色
h)課　　程
i)人員編制
j)其　　他

2.專題研究之優先順序

設置專題研究諮詢委員會，聘請校內外專家學者擔任委員，定期集會就是以解決當前問題或有關今後決策建議之專題研究，提供意見。

台灣農業大專院校內部農業推廣功能之行政與組織決策，應列爲優先專題研究之一。台灣農業大專院校對於校外農業推廣工作應扮演何種角色？何種推廣工作應由大專院校提供諮詢，何種推廣工作由大專院校主辦，亦爲值得深入研究之問題。

3.專題研究之地點

大部分專題研究可與實際執行農業推廣專案計畫之高級農業（工）職校，區農業改良場、農會及其他有關機構合作進行。部份專題研究可以國際合作方式與其他國家農業推廣教育學者共同進行，以資互相學習觀摩。例如中華民國爲其他國家提供技術協助時，可與地主國農業教育專家合作，進行對於雙方互有助益的專題研究。

問題討論：

1.中興大學農業推廣教育研究所所舉辦的專題研究，如何確實能使台灣地區高級農業(工)職校與農業推廣機構直接受益，請提供建議。

2.您認爲農業的定義？它是否應包含沿岸養殖漁業、環境保護、市區與室內景觀、寵物飼養以及相關的非農事活動？

⑴應該包括農民所需的服務

⑵與行政和組織形態發展相關，農業職(工)學校課程內容相關的研究

⑶台灣鄉村社區領導人的特質

⑷研究農業職(工)學校教師推展工作者士氣低落的原因和解決方法

⑸研究農民知道什麼？期望什麼？

研究政府在保證價格，農業保險方面所扮的角色

⑹防止土地面積繼續分化

⑺加強農產品產銷的合作精神

⑻研究老師、學生從事農業工作不同方法的有效性

⑼研究增加年輕人從事全時間農事的方法

⑽老師績效的評估和改變行爲動機的有效性

⑾加強教師進修意願的相關研究

6.請提供其他應考慮的困難？意見與課題。

研究所能提供的課程有那些？農業職（工）學校對這些課程的期望是什麼？

⑴新課程的設計和計劃

⑵農業職(工)學校所需設備標準之研究，設備目前使用程度之研究

⑶中華民國在不同國家技術團所用推廣方法的有效性

(4)研究生績效的評估
(5)高齡農民（65或65歲以上）需求的評估
(6)專業人士在推廣和農業教育服務意願的衡量

結　論：

研究專題可大列爲二大類：即人文方面和科技方面。建議研究方面可歸納爲下列數項：

1. 農場經營
2. 農校課程改進
3. 產銷問題
4. 社區美化
5. 農村規畫
6. 教師士氣改進，教師管理
7. 農民從農意願改進
8. 推廣人員敬業精神
9. 農村家庭教育
10. 推廣體系整合
11. 鄉村與社區環境規畫與評估
12. 農校畢業生就業問題
13. 農業資訊
14. 農業環境影響評估
15. 農業災害調查，預測，與評估
16. 稀有類科教材教法的改進
17. 農校各科設備標準及利用現況
18. 農業成功實例
19. 農校上課與實習時間調整問題
20. 證照制度之研究：包括農藥商、肥料商、專業人員等
21. 農產品品牌之研究
22. 農業自動化
23. 區域農業規畫
24. 農藥教育
25. 農業保險

第三議題：高級農業(工)職校農科師資之培育

指導員：胡啓和教授

重點說明：國立中興大學農業推廣教育研究所將自八十學年度起爲有志從事農業訓練與推廣工作，或擔任高級農業(工)職校教師之推廣人員及大學農業院校相關科系畢業生、開設與農業教育有關之課程。但目前農業職校合格農科師資極爲貧乏，且無專責機構爲農職教師開設師資培育課程。農業推廣教育研究所成立後擬將開設高級農業(工)職校師資培育課程列爲主要任務之一，俾使大學農業院校相關學系畢業生有意獻身農業推廣教育工作者於修習上述課程後得以成爲農業推廣專門技術人員與高級農業(工)職校教師。

問題討論：

1. 台灣地區高級農業(工)職校每年需要多少合格之農科教師？
   ⑴可查核台灣省教育廳人事單位省立農職學校，農業專科學校教師未來五年內「屆齡退休」及「自願退休」人數之評估
   ⑵農委會已委託嘉義農專辦理「農業人力規劃調查」可以作爲規劃根據
   ⑶從各學校取得可靠資料補充教育廳的資料
   ⑷使用問卷做爲計劃的準備，訂定短期、中期、長期計劃
   ⑸目前高級農業(工)職校教師爲1098人，52%任農業方面課程，如果3%調動率，每年需17位新老師
   ⑹推廣教育研究所應開20個學分教育課程，以積極培育農業新進
2. 農科師資培育課程開設之前，各高級農業(工)職校所需新增師資從何而來？（技術證書或專業教育）
   ⑴商調—已取得資格之同級教師
   ⑵甄選—用筆試、口試、試教三種方式同時進行
   ⑶介聘—具有任教資格者
   ⑷可由私校商調老師，但需經考試甄選
   ⑸偏遠地區經考試甄選合格教師，希望可免修20個教育學分（特別是技術方面的老師，如獸醫課程）
   ⑹很多試用的農業方面老師爲台大畢業或興大研究所畢業者，他們只需10個教育學分。

3. 台灣高級農業(工)職校缺乏合格農科教師之嚴重性如何？農業推廣教育研究所應採取何種對策，藉以紓解此種缺失？

(1)合格農科教師缺乏情形相當嚴重，行將設立之農業推廣教育研究所應積極籌畫，培養具有碩士學位之農科教師

(2)農業教師不足之情況在某些農校尚不構成嚴重問題

(3)推廣教育研究所應即於暑期開設教育部認可之教育課程，以應當前之需

(4)鼓勵僅有專科資格之教師，進修學士，碩士學位

(5)教師之培養應採多元化政策

(6)師資之缺乏在未來，由於教師之退休將愈見嚴重

4. 目前農業大學院校畢業，具有學士學位者須再補修教育課程二十學分始能成爲合格之高級農業(工)職校農科教師。農業推廣教育研究所擬開設的農校師資培育課程，其中大部份可能與國立師範大學所授者相同，但須另行授講適合於農業教學的若干特殊課程。站在農業從業人員立場，如果想在高級農職校任教，最有必要修習那些教育課程？

(1)農業教育課程

a. 專業教育課程

b. 教材、教法

c. 一般教育課程

d. 教育心理學

e. 農業技術課程之教材、教法

f. 推廣方法

(2)技術課程

a. 農業概論

b. 農村社會學

c. 農民心理學（成人心理學）

d. 工具之基本操作

e. 應用農業技術

(3)其他課程

5. 請指出高級農職農科教師應該修讀而目前國立師範大學尚未能開設的任何課程。

(1)農村社會學和其他農業相關課程

(2)農業方面之合作，包括農民合作社、環保教育、污染問題、資訊課程

(3)專業課程之教材、教法

6. 您認爲所有有意擔任高級農職農科教師在取得合格教師之前是否先要經過「實習」或「代用」階級？如果答案爲是！應「實習」或「代用」多久？一學期、兩學

期、或其他。

(1)應該實習，時間久暫都無問題，其癥結在實習期間應嚴加考核，如發現不適任，期滿後即應不正式聘用，否則聘後發現有不適任情形再行解聘，極感困擾。

(2)比照師大實習一年

(3)「實習」較「試用」一詞合理

(4)實習一年較好

(5)依據師範教育法執行即可

7. 中華民國的農職教育與農業推廣計畫如何考評？

(1)「行爲」和「能力」應分別考評

(2)應以經濟效益爲考評標準

(3)將來趨勢採「自我考評」

(4)「考評」應求實際，落實，避免「填表式」方式

(5)「考評」應落實，以確定達到目標爲著眼點

(6)參考國外考評辦法，以求精確

(7)也可由大學與教育機關，農林機關聯合舉辦考評

8. 中華民國農業推廣體制農職教育體制應如何改進？

(1)確定推廣人員地位—人民團體或官派

(2)以改良場作爲推廣教育中心

(3)研究所之進修生應包括農會推廣人員，須設計特殊學位和教育學分課程

(4)農校各科畢業生應作「技術士」能力之鑑定，以期學以致用

(5)政府應制定法令，防止農用土地再分割

(6)學術研究單位之研究成果經授權後，應循推廣管道轉入業者。應加强推廣人員之表達力，操作能力等溝通條件以充分發揮研究成效

(7)改良場、研究所之專門技術人員應可聘爲農校之〝技術教師〞

(8)農校之圖書、期刊、設備應即時更新

(9)農校應加入推廣系統，比照大專農業院校辦法實施

(10)師資培訓、課程、推廣系統應多元化

(11)本次研討會之報告，名稱應取消〝工〞字

(12)農校應在實習處下增設推廣組

(13)農業推廣人員宜具備農科教師資格，以期互爲增補

(14)過去農教系畢業生及其他農院各系畢業生應能允許回所再進修教育行政方面，及專業學科等方面課程

9. 其他問題討論

第四議題：辦理高級農職教師與各級農業推廣人員在職講習

指導員：宋濟民教授

重點說明：中興大學農業推廣教育研究所將自八十學年度起爲有志從事農業訓練與推廣工作或擔任高級農業(工)職校教師之推廣人員及大學農業院校相關科系畢業生，開設與農業推廣教育有關之課程。此外該研究所配合農職教育與農業推廣計畫發展之需要，亦將辦理高級農職農科教師與各級農業推廣人員在職訓練列爲主要任務。研究所之教授將主動積極地倡導人力資源開發工作。

設計一套有效的在職講習計畫需要參加講習人員及支助經費的行政機關保持密切的關係。舉辦在職講習必須著重其品質及其所造成的長期影響。目前高級農職農科教師已應邀參與許多校外的推廣活動以至影響若干教學工作，爲了參加教師在職講習，校內人員配置似應作妥善調整，以免造成接受在職講習乃額外負擔的錯覺。

策畫與舉辦農業推廣人員在職講習也有若干問題有待克服。其一爲在職講習任務繁重，並非依賴一個機構所能辦好。其二爲修正現行的農業推廣法令中有關加薪與陞遷的規定，協助行政主管保持正確的觀念，肯定在職講習有助於專業才能的發展。

農業推廣教育研究所僅能辦理部分的在職講習，其他部分在職講習應由其他機構辦理。確定那些部分在職講習由興大主辦當視農業推廣教育研究所教授陣容決定之後才能定案。有了教授的人選，才能確定興大所辦理的農校教師與推廣人員在職講習計畫是由那幾項專長組合而成，要講授那幾種基本課程。

簡扼言之，農業推廣教育研究所要辦理下列五種事項：

1. 應有關機關團體之請，提供高級農職教師與相關人員的在職講習服務。
2. 應農職教師、推廣人員或其他人士之請，辦理短期講習。
3. 開發設計各種新的方法，提升人力資源的品質。
4. 須發證書給參加前述各項講習的結業人員。

問題討論：

1. 現在高級農職教師與相關人員最需要那些在職講習？目前這些需要係以何種方式獲得解決？
2. 現在農業推廣人員最需要那些在職講習？目前這些需要係以何種方式獲得解決？

3. 請指出有那些技術或方法可由農業推廣教育研究所加以運用，藉以提升高級農職教師與各級農業推廣人員的專業才能？
4. 鑒於中興大學農業推廣教育研究所無法舉辦農職教師與農業推廣人員所需要的全部在職訓練，該所今後應集中辦理那幾項在職講習，較爲合適？
5. 請提供其他應考慮的困難，意見與課題。

下列所提爲與會者所提之建議

1. 在職訓練的內容
   ⑴在職訓練的內容應該著重於與參與者背景有連貫性，這一點對農業方面老師尤其重要。
   ⑵在職訓練內容應著重於新科技知識的介紹，包括新技術、新品種、市場調查、管理、產銷、資訊傳播、農工政策宣導、推廣技巧的加强和農民組織的宣導。
   ⑶課程名稱需與部定和省教育廳定者相同。
2. 在職訓練的安排方式
   ⑴可大致區分爲短期、中期、長期的訓練。
   ⑵短期訓練大概爲期一星期。
   ⑶中期則爲期一至兩個月，視課程需要而定，階段式的安排，時間則以寒暑假爲主。
   ⑷長期的訓練需修40個學分，這類班次可能名額不如工科，但仍應不計成本，積極辦理。
3. 在職訓練的誘因
   ⑴短、中期訓練，應可考慮給予修業證書，這份證書可爲修業人士結業的證明。
   ⑵長期進修由於時間較長，40個學分修畢可以有實質的好處（晉級敘薪）。這種課程可以利用電視、電腦等方式來上課。
   ⑶開設這種課程後（短期、中期、長期），應多考慮專科校畢業生、老師、年長推展工作者和已有高教育者的需要。
4. 在職訓練的資金來源

   農業推廣教育研究所應就訓練內容和預算支持積極與農業機構取得聯繫。此外，可藉由報紙、專題論文、廣播的交流來突顯訓練課程的特性。
5. 機構間的協調
   ⑴對推廣人員的訓練宜加强在專業技術的輔導，建立推展人信心和能力。
   ⑵强調和改良場、研究單位、高級農業職校的橫向協調。
6. 其他難題
   ⑴缺少資金無法幫助員工參與此一訓練課程。
   ⑵農會推廣員工的離職率高（很多因素影響離職率，包括政治考量）。

第五議題：辦理農場經營管理短期訓練

指導員：彭作奎教授

重點說明：國立中興大學農業推廣教育研究所將自八十學年度起爲有志從事農業訓練與推廣工作或擔任高級農業(工)職校教師之推廣人員及大學農業院校相關科系畢業生開設與農業推廣教育有關之課程。此外，興大農學院各學系、各研究所及農業推廣委員會亦應校外各界要求，經常舉辦短期講習。今後興大農業推廣教育研究所將成爲校內一個行政協調中心，促使上述推廣教育活動逐漸系統化。

由於興大農業推廣教育研究所聘請之教授可望在成年人與青少年學習課程開發與課目策劃，溝通技巧與領導才能培育、專案計畫設計與考評，以及行政與監督等領域中各具專長，對於校內各學系以專門技術見長之教授應外界之請提供服務時，當可在其所授課程之設計、教學與評估的方面予以協助。

舉辦農場經營管理短期講習時有關課程設計、教學與考評的工作，將爲農業推廣教育研究所的學生，提供很自然的實習機會。

問題討論：

1. 各地高級農職與推廣機構之間所提委託興大辦理農場經營管理短期講習的申請應如何合作更佳的協調與整合？
   (1)目前國內農校及農業推廣單位甚多，恐不宜由各單位妥託中興大學農推所舉辦農場經營短期訓練班。中興大學可透過教育廳向各農校科主任辦理問卷調查各校所需開授之訓練班，依據調查結果、性質、輕重緩急、人數等，統籌委託中興大學舉辦講習班。
   (2)至於農業推廣從事人員之訓練，機關已有分工默契，即短期(1～3天)之訓練由改良場負責，中期由北投農訓中心主辦，長期由嘉義、屏東農專負責。今後，興大農推訓練班之主題必須在介紹新科技、新方法、新品種及緊急處理問題，例如，農民用藥安全，花卉品質管理，組織培養產期調整技術等。
   (3)綜合性農場經營管理訓練班之課程應至少包括下列數課程。
   a.農業及農業經營政策
   b.農場設計與管理
   c.農場經營分析
   d.農業計劃經濟評估

e.市場調查與分析
f.農業合作
g.農產運銷決策
h.農業推廣企劃與評估
i.農村社區規劃
j.農家簿記與分析
k.農民生產組織及四健會
l.農村調查與統計
m.電腦在農業經營之運用
n.農業經濟
o.農業預測之方法與實務

(4)短期訓練班之教學應理論與實務並重，講習宜由大學教授及實際工作經驗有專精之人士共同開授以期理論與實務結合。應將各種產業經營成功之農業經營者，請至課堂報告經營心得及成功因素，並至該成功農場參觀。由教授做有系統分析，以爲學員回工作崗位上即可教學及推廣。所舉辦之短期講習班，在農業推廣法未通過前，宜與農委會、農林廳及各主辦單位協調，以免浪費或重覆。

(5)農業經營班之授課對象宜考慮區域性之差別及工作性質之差異，分別開班較具實用性，或可考慮以縣爲單位予以開班。惟如何與區農業改良場及各農校分工，必須有妥切的協調。

(6)目前教育廳已對各農校教師舉行進修意願調查，農推所應可從此資料獲得開授短期訓練班之需要與方向，惟開授班次不宜太頻繁，期間不宜太長，以免影響學校教學。

2.台灣地區內外有無能操華語的農業推廣教育專家，具備資格具有意受聘爲興大農業推廣教育研究所教授？請就所知，一一列舉。

(1)建議農學院院長兼農推所長，下設教學研究委員會，以統籌農推所課程開授事宜。

(2)農推所之教授宜廣爲延攬，教師必須具備理論與實務。至少增加「專門技術講座」延攬教師入農推研究所。

3.高級農職教師與推廣人員需要那些農場經營管理課程？

課程之安排宜按工作性質、教育程度等分別訂定，以收訓練效果。而訓練班亦應分別安排綜合性的農場經營管理班及各別專題性訓練班而專題性。短期訓練不宜偏廢教育理論，行政管理之課程，以提升校園倫理及教師形象。同時，如何訓練教師及農業推廣人員，搜集整合各次級資料之方法與理論，以增進教師研究之能力。

4. 興大農學院各學系教授應如何加以更充份的運用，使他們爲高級農校與推廣機構所需的農場經營管理訓練課程提供協助？

(1)國立中興大學農推研究所應建立本校各系教授之專長，研究主題，以及意願至農校及推廣機構授課之名單，以爲各單位聘請教授之聯絡參考。

(2)目前，農場經營管理訓練班最感缺乏之師資爲綜合生產技術經營與管理課程，如水旱作輪作之技術與管理，農漁牧綜合經營之技術與經營管理，收穫後之冷藏、包裝、檢驗等課程。

5. 請提供其他應考慮的困難、意見與課題。

(1)興大農推所應儘速建立「全國農業推廣資料中心」以利農業資訊網的建立。

(2)興大農推所可考慮設立「農業推廣及教育人員訓練中心」，提供住宿及膳食。

(3)有關調訓農校教師，宜透過主管單位一教育廳輪派有關教師參加。興大農推所對進修教師所修學分及課程，宜比照暑假進修辦法，予以承認學分及結業證書，以激勵教師進修。

(4)建議農委會編列預算在實習輔導處下增設農業推廣組，以爲農推所畢業生提供就業機會。

(5)建議農校教師接受短期訓練班後，可取得自耕農身份，以利教學實作技術配合。地方農會總幹事，水利會主席應予以調訓，或具有資格進修。同時，對於專科畢業之學生至本校攻讀碩士學位，應要求其先得到學士學位。

第三部份

研討會結論

閉幕致詞—農業推廣教育研究所未來發展計畫

李院長成章

各位貴賓、各位校長、各位老師以及本校的教授同仁

在進入本次研討會的總結之前，本人首先要利用這個機會向各位表達誠摯的謝意，由於各位先生在百忙中抽空參加本次研討會，並且在這短短的二天半中，充分的提供寶貴意見，使得這次研討會能夠順利的完成它的任務，本人確信如果沒有各位的積極參與，這次研討會絕對不會有如此豐盛的成果，本次研討會也絕對無法發揮歷史傳承的重要使命，本人首先要向各位表達衷心的謝忱。

在這二天半的研討會中，針對本校成立農業推廣教育研究所的目的、招生對象、所務運作等方向，都提供了相當多的建議，綜合剛才由本校五位教授所提出的綜合報告，本人大致歸納出下列幾點看法：

㈠對於本校成立農業推廣教育研究所的主要目的，我們大致已獲得共識，在近程目標方面，提供各種進修課程以供一般生與在職進修的農校教員及現職推廣人員取得碩士學位，爲了完成此一任務，這個研究所在課程安排上必需同時兼顧農業專業技術與社會行爲科學的需求，而本所在這兩方面將盡量考量其必要性，容許其均衡發展。本人認爲透過這樣的安排，必定能提供相當充分的背景知識，使本所的畢業同學能夠從容應付各種挑戰。至於在中程發展方面，一旦教育部同意放寬對師範師資培育的限制，則本所即可進一步提供與師資有關的各項課程。透過此一安排，本人確信可以進一步擴大農校教師的來源與提高農校教師的素質，當然各位也提到本所成立的另一重要目的，亦即提供短期進修課程供農校老師與推廣人員研習，我想此一工作不僅牽涉到農業推廣教育研究所，也與本校農業推廣教育委員會有關，因此，我們將會與有關人員，進一步研商以做成決定，不過本人確信，我們將會有最佳的安排以滿足各位所提在這方面的需求。

㈡在招生的對象方面，各位來賓也表現了高度的關切，也一再強調，在職進修對提升農校教師與推廣人員的重要性，個人以爲，在兼顧到入學考試的公平原則之下，我們一定會慎重考慮而採用合理的考評方式，希望在這種情況下，能夠選取眞正具有「服務熱誠」而且具有「足夠潛能」的學生。總之，我們的主要目的是在選擇以「服務社會、提升社會品質」爲己任的學生，以避免可能發生的人力流失問題，但是基於人才培育的綜合考慮，我們也不能忽視年輕學子有志於「社區服務」的意願，本人深信在確定了選訓對象之餘(不論他是一般生，或者是進修生)，經過農推所的專業培育課程，應該在專業技術，推廣與溝通技巧，以及服務熱

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忱等方面，都會有相當程度的提升，這些畢業生必定會肩負起技術與知識的轉移與傳承的使命，對於這一點，本人確信興大的所有參與同仁絕對可以勝任愉快而達成任務。

㈢在本所的訓練課程方面，我們也達成若干共識，除了一般的推廣與溝通理念技巧之外，農業專業技術，也是必須考慮的方向，我想，儘管我們都同意人才培育的訓練課程，可以有短、中、長期之分，但基本精神是不變的，我們的訓練將以現代化的高科技，企業管理理念，產銷整體化，以及農業生產國際觀爲重點，同時並配合領導統御、組織溝通等技巧，使我們的學生或學員能夠擔負教學與推廣的任務。

以上三點是本人綜合各位先生在這二天半提出的各種高見，所整理出來的一些結論，本人確信，不僅是農業推廣教育研究所的同仁，本院其他系所同仁也會全力配合，使這一研究所的運作能夠配合現實的需要，讓我們一起企盼在不久的將來，會有一批年輕、具有熱誠、同時也充滿自信的農業新尖兵，來參與我國農業活動的再更新與再開發。最後讓我再次利用這個機會向各位表示十二萬分的謝意，敬祝各位身體健康、精神愉快。謝謝！

研討會參加人員名單

單　　位	參　加　人　員					
中央研究院	李崇道					
行政院農業委員會	洪肇鋒	林世同				
教育廳	陳澤民	林輝煌				
中興大學	陳清義	李成章	陳載永	陳脉紀	彭作奎	莊作權
	黃敏展	游繁結	鄭三寶	蘇宗宏	羅明哲	劉正宇
	白　鏡	蔡順仁	吳明敏	楊耀祥	王銀波	貢毅紳
	楊策群	胡啓和	陳世雄	謝快業	宋濟民	吳福明
國立嘉義農專	林中茂					
省農會	何銘樞					
桃園區農改場	邱發祥					
台中區農改場	陳廷煥					
台南區農改場	路學忠					
高雄區農改場	蘇俊茂					
桃園農工	呂理福	劉正勳				
龍潭農工	鍾國容	劉興元				
苗栗農工	梁大則					
大湖農工	溫榮發					
霧峰農工	詹耀東	陳治廷				
員林農工	羅力恆	林賜郎				
虎尾農工	吳炯泰					
北港農工	趙錦水					
曾文農工	葉源皇					
民雄農工	汪榮哲					
北門農工	溫烘祥					
岡山農工	呂見達					
台東農工	傅清順					
內埔農工	鍾如仁					
台中高農	沈征帆	楊秀吉	鍾克修			
仁愛高農	梁光雄	陳聰明				
台南高農	江佐顒	林清和				
佳冬高農	童貴和	藍鴻輝				
旗山農工	邱明輝					
西螺農工	江　濱	林永進				
台北市立松山農工	楊良楚					
金門農工	李光明					

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A SUMMARY OF PROCEEDINGS AND PARTICIPANT RECOMMENDATIONS FROM A NATIONAL WORKSHOP ON INSTITUTIONALIZING PROGRESS IN AGRICULTURAL EXTENSION AND EDUCATION IN TAIWAN

April 22-24, 1991

Host and Co-Sponsor

College of Agriculture
National Chung Hsing University
Taichung, Taiwan, Republic of China

Other Sponsors

Ministry of Education
Council of Agriculture
Provincial Department of Education

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A SUMMARY OF PROCEEDINGS AND PARTICIPANT RECOMMENDATIONS FROM A NATIONAL WORKSHOP ON INSTITUTIONALIZING PROGRESS IN AGRICULTURAL EXTENSION AND EDUCATION IN TAIWAN

Compiled by Workshop Planning Committee Members:

Cheng-Chang Li, Dean, College of Agriculture, NCHU

Shih-Tung Lin, Technical Superintendent, Council of Agriculture, Executive Yuan, Republic of China

William L. Thuemmel, Associate Professor, Agricultural and Occupational Education, University of Massachusetts at Amherst; and Visiting Professor, College of Agriculture, NCHU

O. Donald Meaders, Professor Emeritus, Agricultural and Extension Education, Michigan State University

Tse-Chun Yang, Director, Agricultural Extension Service, NCHU

Happy Kuay-Leh Shieh, Extension Professor, College of Agriculture, NCHU

Chi-Ho Hu, Professor, Department of Food Science, NCHU

Jih-Min Sung, Professor, Department of Agronomy, NCHU

Tso-Kwei Peng, Director, Graduate Institute of Agricultural Economics, NCHU

Shih-Shiung Chen, Associate Professor, Department of Agronomy, NCHU

Ban-Yuan Chen, Specialist, Agricultural Extension Service, NCHU

Workshop Rationale:

During the past 40 years great progress has been made both in education and agriculture in Taiwan. However, during the past 10-15 years the pace of change in many fields, including agriculture and education, has accelerated. Changes in agricultural technology, and the changes in the communications and transportation networks, have not been matched by such significant changes in the preparation and in-service of agricultural teachers and agricultural extension workers in the Republic of China. With this in mind, the Ministry of Education recently approved the establishment of the Agricultural Extension Education Graduate Institute (AEEGI) at National Chung Hsing University. The AEEGI is to accelerate change and institutionalize progress in the transfer of agricultural technology in Taiwan. This workshop will provide a forum for leaders in agriculture and education to contribute suggestions for developing policies and plans for the new Institute.*

Workshop Objectives:

1. To solicit input from workshop participants on problems and needs in agriucltural extension and eduction in Taiwan.
2. To get suggestions and comments from key persons regarding proposed directions and policies for the new Agricultural Extension Education Graduate Institue (AEEGI) at National Chung Hsing University.
3. To provide visibility to the new Institute and to gain support from key leaders in both education and agriculture.

* [Note: Most of the rationale for the workshop and the five function descriptions are cited from "A Proposal to Establish an Agricultural Education Research Institute at National Chung Hsing University" by Dr. O. Donald Meaders, Professor Emeritus, Agricultural and Extension Education, Michigan State Unviersity. Professor Meaders' proposal was the primary document used by National Chung Hsing University in seeking Ministry of Education approval for the new Institute.]

WORKSHOP PROGRAM

April 22, Monday

17：00 Arrival at Teachers' Hostel, Taichung

17：30 Dinner

Pre-Session

18：30 A Philosophy of Agricultural Extension and Education for the Republic of China
--Dr. Robert C. T. Lee, Vice President, Academia Sinica

19：30 Highlights of the New Agricultural Extension Law for the Republic of China
--Shih-Tung Lin, Technical Superintendent, Council of Agriculture

20：00 End of Pre-Session

April 23, Tuesday

8：00—9：00 Registration

Session I

9：00—9：30 Opening Ceremonies

Welcome Remarks Dr. Ching-Yin Chen, President, NCHU

Introductions / Orientation Dr. Cheng-Chang Li, Dean, College of Agriculture, NCHU, (introduction of special guests and overview of AEEGI)

9：30—10：00 Break--photographs, refreshments

10：00 Extension Programs at NCHU
--Tse-Chun Yang, NCHU

10：20 Some Challenges for the Agricultural Extension Education Graduate Institute: Suggested Characteristics for the Graduates
--O. Donald Meaders, Michigan State University

11：00 Questions, Comments, and Answers to Presentation by Professor Meaders

11：30—12：45 Lunch Break

Session II

Chairperson: Shih-Tung Lin, Council of Agriculture

12：45 Trends in Agricultural Education in the United States with Implications for Taiwan
--William L. Thuemmel, University of Massachusetts

13：30 Questions, Comments, and Answers to Presentation by Professor Thuemmel

14：00 The Five Functions of AEEGI: Guidelines for Discussion Group Input
--Shih-Tung Lin

15：00 Discussion Group A: Establishing the Master's Degree Program
--Happy Kuay-Leh Shieh, Coordinator
Discussion Group B: Establishing a Research Program
--Tse-Chun Yang, Coordinator
Discussion Group C: Establishing a V-A Teacher Certification Program
--Chi-Ho Hu, Coordinator
Discussion Group D: Supervising an In-Service Program for Teachers of Vocational Agriculture and Providing In-Service Programs for Agricultural Extension Personnel
--Jih-Min Sung, Coordinator
Discussion Group E: Establishing a Program of Agricultural Management Courses
--Tso-Kwei Peng, Coordinator

16：00 Rotate to Second Discussion Group

17：00 End of Session II

April 24, Wednesday

Session III

Chairperson: Shih-Tung Lin

Discussions continued from Session II

08 : 30	Rotate to Third Discussion Group
09 : 30	Break--refreshments
10 : 00	Rotate to Fourth Discussion Group
11 : 00	Rotate to Fifth Discussion Group
12 : 00	Lunch Break
13 : 00	Summaries of Discussion by Coordinators of Function Discussion Groups. Each coordinator will have 20 minutes to summarize his observations. --(the five discussion coordinators)
14 : 40	Break--refreshments
15 : 00	A Panel Discussion to Summarize Workshop Results --Dean Cheng-Chang Li, Chairperson; Panel Members Shih-Tung Lin, O. Donald Meaders, and William L. Thuemmel
15 : 45	Future Plans for AEEGI --Dr. Cheng-Chang Li
16 : 00	Workshop Adjournment

WELCOME REMARKS

by

Dr. Ching-Yih Chen, President
NCHU

Vice President Lee, Technical Superintendent Lin, Dean Li, distinguished guests, ladies and gentlemen: I am very pleased to have the opportunity here to attend this National Workshop on Institutionalizing Progress in Agricultural Extension and Education in Taiwan. On behalf of all the faculties and students of National Chung Hsing University, I would like first to extend my hearty welcome to all the distinguished guests as well as all the participants. Your eagerness and great interest in attending the scheduled events have certainly warranted the success of this workshop.

We all are aware that there were quite significant changes in agricultural development in Taiwan during the past 40 years. The traditional yield oriented food production agriculture has now gradually switched to a quality and speciality oriented crop cultivation. It changed not only the common goal of agricultural production; the methods and process of agricultural management were also greatly altered to cope with changing gears. Practitioners of agricultural education and extension are now facing new challenges all the time due to this drastic and quick pace of change. New concepts, new methodologies as well as technologies are urgently in need. In order to meet these requirements--and with the great help from Vice President Lee of Academia Sinica and Technical Superintendent Lin of the Council of Agriculture, the Ministry of Education has approved the establishment of the Agricultural Extension Education Graduate Institute at National Chung Hsing University in the coming July. The main objective of this new institute is to provide our agricultural extension practitioners as well as the vocational agriculture school teachers an opportunity to get the advanced training they have been yearning for. I must give my special thanks to both Dr. Lee and Mr. Lin for their great endeavors and perseverance in helping us to get the idea become realized. My gratitude also goes to Professor Meaders from Michigan State University and Professor Thuemmel from the University of Massachusetts for their expert assistance in designing the courses.

Today, before the formal establishment of this new graduate institute, it is our great honor to be able to invite all of you leaders in various fields of agricultural education and extension from all over the country to attend this workshop. I would like to solicit all the participants at this moment to give us comments and suggestions as to the new direction and route for the future development of this new graduate institute. I sincerely hope that through this exchange and sharing of expertise and experience we can come up with some conclusive guidelines for the administrative as well as the research and teaching activities. With these supporting bases, I have confidence that the new institution will be competent in playing its key roles in the agricultural education and extension fields.

This workshop is supported by the Ministry of Education, the Council of Agricultrue, the Provincial Department of Education, and the Provincial Department of Agricultrue and Forestry. I must express my deep appreciation to Dean Li and his colleagues--without their hard work and effort this workshop would certainly not have been possible. To all the participants and distinguished guests, I wish you all good health and great successful future careers. Thank you for your attention.

INTRODUCTION/ORIENTATION

by

Dr. Cheng-Chang Li, Dean
College of Agricultrue, NCHU

President Chen, Vice President Lee, distinguished guests, ladies and gentlemen: It is a great privilege for me to welcome all of you here to attend this National Workshop on Institutionalizing Progress in Agricultural Extension and Education in Taiwan. On behalf of the College of Agriculture, I would like first to extend my hearty appreciation to you for attending this meeting--for taking the time from your busy working schedules to give us your knowledgeable suggestions and comments on the establishment of the Agricultural Extension Education Graduate Institute on this campus.

In Taiwan during recent years, we have been facing drastic changes in the agricultural labor structure. Most of the younger generation from rural areas is reluctant to engage in farming. Agricultural extension and education are becoming a more and more important task to cope with the fast-paced progress of the modern science technologies.

The Department of Agricultural Education of this university was established in 1955. The education program was then closed in 1983. Since then the teacher resources for vocational agricultural schools have been interrupted and the advanced training for agricultural extension practitioners has been also greatly affected. The university has been aware of the importance of professional teacher resources in the development of a sound agricultural management system. With the great inspiration and assistance of Dr. Lee, Vice President of Academia Sinica, planning for the establishment of the Agricultural Extension Education Graduate Institute was initiated last year. Through the strong support of Vice President Lee and the consistent efforts of colleagues in this college, the Ministry of Education approved the establishment of the proposed new institute as of this July. In this opening ceremony, I must give my special thanks to Vice President Lee; without his key role and leadership efforts, the new institute would be still up in the air.

This workshop was kindly initiated by Vice President Lee to provide an opportunity for practitioners in related fields to share their experiences and expertise in extension and education with the faculties of this college and thus to get together information or

guidelines needed in program planning for the newly established institute. In addition to Vice President Lee, I must express my hearty appreciation to the following support members. Mr. Lin, Technical Superintendent of the Council of Agriculture, has rendered us great help in supporting the organization and coordination of the workshop. Dr. Meaders, from Michigan State University, and Dr. Thuemmel, from the University of Massachusetts, both have given us valuable time from their busy schedules and traveled for long distances to be here to share with us their expertise and assistance in the course and program design for the new institute. In addition, as I have mentioned, many of our colleagues also contributed much to this workshop. The funding for support of this workshop came mainly from the Ministry of Education, the Council of Agriculture, and the Provincial Department of Education. Also, there was some funding given by President Chen from the university budget. All this mentioned support and assistance made it possible to have this event now.

The sources of students for the Agricultural Extension Education Graduate Institute are mainly the vocational agriculture school teachers, the practitioners in the agricultural research institutes-- including the district agriculutral improvement stations, extension practitioners of farmers' associations, and general agricultural technical supervisors. The prime goal of the new institute is to cultivate high level agricultural extension practitioners. The education and training program thus needs to consider the balanced growth of both agricultural production techniques and social behavior. The student will be asked to become familiar with certain agricultural technology techniques and knowledges and then learn how to educate, extend, and promote the learned competencies to local agricultural practitioners. Furthermore, through coordination among faculty in the new institute with scientists in the academic community as well as with agricultural administrators and technical specialists, we wish to lead agricultural extension toward a more healthy, more advanced, and more efficient agricultural technology transfer system.

In the workshop during the next two days, we will have several discussion groups to lead the communication and sharing of experiences on the proposed subject. I sincerely encourage all of you in the audience to share with us your knowledge and expertise without reservation, tell us what should be done, give us directions for where to go. Your knowledgeable comments and expert suggestions will be valuable guidelines for constructing a sound foundation for the new institute being established. I thank you for

your kindly and active participation in this workshop. I wish everyone of you good healthand a happy life.

PLEASE NOTE: THE INTRODUCTORY REMARKS PRESENTED BY DR. ROBERT C. T. LEE, VICE PRESIDENT, ACADEMIC SINICA, AND BY MR. PI-FENG HONG, COUNSELOR, COUNCIL OF AGRICULTURE, APPEAR ONLY IN THE CHINESE VERSION OF THIS SUMMARY.

SESSION I

EXTENSION PROGRAMS AT NATIONAL CHUNG HSING UNIVERSITY: A SUMMARY

by

Tse-Chun Yang, Director
Agricultural Extension Service
College of Agriculture, NCHU

In 1964, the Agricultural Extension Service at National Chung Hsing University (then Taiwan Provincial College of Agriculture) pioneered the establishment of agricultural extension programs with institutions of higher education in Taiwan. The extension services were operated on a project basis by staffs in various departmnets of the College of Agriculture. In 1975, the national government agreed to provide two staff members to the Agricultural Extension Service-- later increased to four. It was not until 1980, 16 years after its establishment, that the Ministry of Education (MOE) agreed to pay stipends to a few teaching staff members for conducting extension services. Since then extension services have become popular in colleges and universities. Today, NCHU is one of seven institutions of higher education in Taiwan that receives MOE stipends for providing extension services.

The Service is currently operated under the jurisdiction of the Agricultural Extension Committee, chaired by the Dean of the College of Agriculture. Extension services may be grouped into the following four categories: (1) To develop and coordinate extension programs, (2) To develop new educational courses and programs, (3) To provide technical support to farmers and district extension service stations, and (4) To organize and provide agricultural extension information.

The Agricultural Extension Service at National Chung Hsing University is expected to be operated as a supporting institute to agricultural extension as well as a source of new ideas and approaches for bridging the gap between knowledge and practice.

SOME CHALLENGES FOR THE AGRICULTURAL EXTENSION EDUCATION GRADUATE INSTITUTE: SUGGESTED CHARACTERISTICS FOR THE GRADUATES

by

O. Donald Meaders, Professor Emeritus
Agricultural and Extension Education
Michigan State University

Good morning! It is my pleasure to have a small part in this very auspicous occasion. It is indeed an honor for me to be able to meet with you to consider the nature and future of this new institution: the Agricultural Education Graduate Institute.

Much has changed since my first trip to Taiwan in 1961, at which time I stayed for about two years as an advisor on the MSU team working at TPCA (later TPCHU). At that time, 30 years ago, we were challenged to assist the colleges of agriculture at both universities, as they worked to strengthen their programs of instruction, research, and extension.

My wife and I lived in a house across the road, east of the campus. The road ended a short distance to the south. There was a wide, open benjo ditch on the side of the road away from campus, next to the housing compound. Between the road and the campus was a small field in which a farmer planted rice. We saw him use the water buffalo to puddle the field, to prepare for planting; to hand plant the rice seedlings, and later to hand weed the rows; and finally to use a hand scythe to cut the ripened grain, and a foot powered thresher to thresh the grain.

There have been many changes in technology and practices for producing rice in Taiwan. The then TPCHU has undergone many changes and expansions of curricula. It became NCHU. NTU has undergone significant changes. The Department of Agricultural Extension at NTU, which Dr. Wyeth and Dr. Ferver and others helped start, has many graduates as well as much research and a graduate curriculum to its accomplishments.

The Department of Agricultural Education at NCHU, with which I worked, was discontinued in 1983 after about 27 years of work for the vocational agriculture program

in Taiwan.

This morning I want to focus on just a few points which seem to me to be critical for consideration as this new Institute gets underway here at NCHU. Those major points are focused around just one question: What should be the characteristics of the graduates from the Institute?

There are so many important parts to the new Institute that it is difficult to focus on just a few points. Each of the five functions could take all of the time allocated to me. Those five functions of graduate study, research, in-service education, agricultural teacher certification, and agricultural management courses, constitute an impressive array of objectives.

Perhaps I may be able to link most of the objectives to that one question: What should be the characteristics of the graduates from the Institute?

Characteristics of the Graduates

The graduates should be willing and able.

Since there are five functions for the Institute, we should define GRADUATES rather broadly. It includes those who complete a master's degree; but it also includes those who are involved with in-service programs, certification programs, and agricultural management programs.

At the outset we should be mindful that the Institute is responsible for a multiple set of programs and that each is important in its own right. It would be too easy to become fixed on the master's degree graduates as THE GRADUATES from the Institute. The master's degree program will be an important part of the overall program but it represents only one of five important functions.

Having graduates who are willing and able begins with the selection of students to enter; it is related to the nature of the instructional program; it is related to the quality of the instruction; it is related to the families of the graduates; yes, it is related to many factors of which only a part are under the control of the Institute.

However, this may suggest to some that the Institute should become rather elitist in the selection of persons to enter any of the various programs. That is the farthest from my mind if elitism is defined in terms of only the scholastically most able, or superior.

High scholarship is important but not the single most important criterion.

Rather, what is meant is for the selection process for persons in all of the programs to focus on multiple factors, to look for indicators of future opportunities to provide sevice to people. When selecting persons for the agricultural management courses, look for the innovator, early adoptor; the community leader, the contributor to the good life for the village. Not just the person with highest marks on scholastic measures.

What should the ideal graduates be willing and able to do? First, we should separate those two points: be willing to do and be able to do.

Be Willing

Certainly the graduates from the MSU program should be willing to work in various roles for improving the quality of life for rural people. The additional education will have opened new doors of opportunity for the graduates and it is strongly desired that they be WILLING to go through some of the doors that are represented by positions in agricultural education and extension for teaching, coordination, supervision, and administration.

There are many factors which affect the placement of the graduates but certainly one of the goals of the program must be to help the individuals be willing to enter positions directly related to the agricultural and extension education programs.

Attitude is a condition of the mind. Some say attitudes are caught, not taught. Like the measles, you catch them. The attitudes of the instructors in the Institute become a critical part of the environment from which the students catch the willingness to serve. Catch the attitude which is reflected in willingness to consider, or even advocate, change.

The attitude of service, being willing to give the best possible performance and assist others, is closely related to the attitude of being willing to serve. At a time when many in society are saying, "What is in it for me?", we would like the graduates to say, "What can I do to help?"

The graduate should be a risk-taker. We know that the future demands much change in the roles of V-A schools; much change in the ways which extension programs are delivered. Our visions today of those roles will undergo change. We must have leaders in extension and agricultural education who can and will help analyze challenging situations and be willing to work for change. Be willing to help create new programs, evaluate them, and then make changes to have the programs become more effective.

Being Able

The changes which have taken place during the past five years here in Taiwan have been breathtaking. And some of the proposed changes require deviation from what has been traditional. Just to mention one, there has been the stated goal of getting farmers to be more directly responsible for their decisions regarding production. To be less dependent upon government. To look at supply and demand information, price outlooks, etc., and then to make decisions about which crops and livestock to raise and how much.

To design and implement educational programs to attain such a goal of decentralization, will require the ability to work closely with producers, and to articulate concerns and ideas clearly to researchers and government leaders.

The graduates should have leadership skills. Such skills can be enhanced by the nature of the instruction but there must be a foundation for such additional skills at the time of enrollment.

For teachers and extension workers there will be a priority for planning, organizing, and conducting educational programs. The leadership skills should enable those persons to meet easily with other teachers, administrators, extension workers, and related educators. But they must be able to use concepts related to cognitive, affective, and psychomotor learning.

For persons involved as participants in the in-service programs it is essential that, as graduates, they are able to understand more, to have up-dated knowledge and skills, and to have some experience with activities related to how to share such knowledge and skills with others.

The desired skills should enable the graduates to analyze situations for which new programs may be required. The graduates should have a broad understanding of the many fields of agriculture but not necessarily be specialists in any of the technical fields. The specialization should be in the discipline of education.

The graduates should be able to quickly identify the key components necessary for effective education programs and to communicate such in tactful ways to the persons with whom they are working.

The graduates should be flexible in the approach to planning programs with other persons. It is critical to be able to distinguish between the process for planning and the substance of planning. The roles of educators demand that much knowledge be used for

planning such as how to write objectives which are relevant to the needs of the persons for whom the programs are being planned.

Conclusion

The opening of the Agricultural Extension Education Graduate Institute marks the beginning of a new challenge for NCHU. The leadership at NCHU will need much cooperation from all of you in the various branches of government, and the several institutions represented.

Perhaps the greatest challenge in the immediate future will be in the selection of people for the staff of the Institute. No organization or institution can rise above the level of its staff.

My discussions with key faculty members in the Department of Agricultural and Extension Education at Michigan State University just prior to departure for this trip, reminded me of their continuing concern for your success. I believe that those concerned faculty members are both willing and able to help you achieve your goals. And in the process, they look forwrd to learning more about the process of development for which Taiwan is such a good example.

Finally, the road on the east side of the campus no longer ends at the river. A bridge has been built and a four-lane road connects to many places. The open benjo ditch has long ago been covered. The small rice paddy has disappeared. In 1961-62 we did not anticipate all of the change. Neither do we today anticipate the exact nature of the institution and society for tomorrow.

Hopefully, working together we can make that future as bright as possible.

Thank you.

TRENDS IN AGRICULTURAL EDUCATION IN THE UNITED STATES WITH IMPLICATIONS FOR TAIWAN

by

William L. Thuemmel, Associate Professor
Agricultural and Occupational Education University of Massachusetts

Introduction

It has been 23 years since I conducted the research for my dissertation here in Taiwan. At that time, I also worked with Dr. Meaders. He was the Michigan States University faculty member who directed the research activities for my doctoral study entitled "High schools and vocational agriculture schools: A comparison of the farmer-performances of their senior graduates in Taiwan." It is wonderful to be back in Taiwan, to be assisting with efforts to further the implementation of the Agricultural Extension Education Graduate Institute (AEEGI), and to be working with Dr. Meaders and the many fine professionals here who are concerned with strengthening agricultural education in the Republic of China.

During the past two decades, I have attempted to keep informed on agricultural and educational developments in Taiwan, mainly through the research efforts of Professor Meaders. And, for the past two months, I have been trying to learn firsthand more about the current status of agricultural education in Taiwan and how the new Institute, being established here in the College of Agriculture at National Chung Hsing University (NCHU), can best be implemented.

I have been an agricultural educator now for nearly 30 years, over half of that time as an agricultural teacher educator at the University of Massachusetts. Since my seven months of experience here in 1968, I have completed about five years of professional assignments in the international arena--primarily in planning and developing institutions to better prepare professionals in agricultural education. Incidentally, I consider agricultural education to include both the preparation of agricultural teachers (for the formal, usually vocational, school system) and the preparation of extension personnel (for the nonformal educational system). I will focus the balance of my paper on those aspects

of agricultural education which have a direct impact on the preparation and in-service education of professionals in agricultural education.

Some Trends in U.S. Agricultural Education

The first program for preparing agricultural teachers in the United States was begun at Massachusetts Agricultural College (now the University of Massachusetts) in 1907. During World War I, the U.S. Congress enacted two laws which authorized federal monies to support agricultural education: (1) in 1914, the Smith-Lever Act provided funding for extension education (established the Cooperative Extension Service), and (2) in 1917, the Smith-Hughes Act provided federal dollars in support of vocational education in agriculture (including home economics). Both laws had provisions for preparing professionals in their respective areas. I might add that Dr. Kenyon L. Butterfield, President of Massachusetts Agriculture College, was instrumental in getting the Congress to tie extension education to the land-grant colleges which had been established several decades earlier. Also, that four vocational agriculture schools in Massachusetts were considered as models or prototypes for supporting agricultural education under the Smith-Hughes Act. Three of those early secondary schools were county agricultural schools, in many respects similiar to the vocational agriculture (V-A) schools in Taiwan. Incidentally, those three county agricultural shcools were rather unique in the U.S. (and still are today) in having both the vocational agriculture school and the county extension education services on the same campus. The chief school administrator (the director) also was, and still is today, the county extension director. I have mentioned the role of Massachusetts in the early federal legislation in support of agricultural education in the U.S., not to bore you with historical knowledge about the state in which I work, but to provide some foundation for analysis later in this paper.

In the United States, vocational education programs in agriculture were legislated and suppported "to train present and prospective farmers for proficiency in farming." They were intended for boys of age 15 or older and adults and their educational programs were limited to agricutural production or farming. The Vocational Education Act of 1965 impacted heavily on vocational education. It essentially deregulated the various narrowly defined vocational program areas and, in the case of agriculture, focused attention on the non-farm aspects of agricutlural education. It also encouraged the

enrollment of female students in a previously all-male educational program. During the past 25 years several changes have occurred in reconceptualizing the field of vocational agricultural education in the U.S., but the greatest impact has come from a relatively recent three-year study of agricultural education in the secondary schools completed by the National Research Council. The results of this study are reported in a publication entitled. Understanding Agriculture: New Directions for Education (1988). The study was initiated because of broad concerns about "the declining profitability and international competitiveness of American agriculture, as well as concerns about declining enrollments, instructional content, and quality in agricultural education programs " (p. 5). I will summarize the Council's findings with regard to agricultural teacher education programs after we first turn to a review of some trends in the nonformal aspects of agricultural education or agricultural extension education.

A Brief Historical Review of U.S. Extension Education

The Cooperative Extension System, established in 1914 as the Cooperative Extension Service, is a public-funded, nonformal educational system that links the education and research resources and activities of the U.S. Department of Agriculture (USDA), 74 land- grant universities, and 3,150 county administrative units (Extension Service, USDA, p.1). Extension has always directed its programs toward meeting the needs of farmers, families, and communities. Although its programs have been oriented more toward rural populations, urban programming has emerged in many geographic locations with great success. Education has been the most important function of the Cooperative Extension System for nearly three- quarters of a century. This has been made possible by a rather unique partnership which has linked research at the land-grant universities with networks of county Extension offices to provide a very effective system of informal education and probelm-solving assistance to the general public (Report of the Futures Task Force to ECOP, p. 30).

Approximately every ten years since World War II, the Cooperative Extension System has completed a self-study to examine its organizational structure and programs, and to recommend changes to insure its future success. While Extension has an impressive past as a catalyst for individual and group action-- with only modest changes in its mission, organizational structure, and programs, today its very future is being

questioned. The crises which agricultural extension education is experiencing in the U.S. at the present time, is perhaps even greater than the demands for reform in its formal education counterpart--vocational education in agriculture. Nonetheless, both delivery systems are being faced with tremendous pressures for reform.

Demands for Institutional Reform During the 1980s

Until the 1980s, it seems professional agricultural educators in both extension and vocational education in the U.S. were quite content to view their occupational specialty as being quite secure. Both groups of professionals have long felt (and with considerable justification) that since their educational systems were long- established with at least some federal government support, that their programs were well-meaning and people-oriented, and that if they worked hard and did what their state plans called for they would continue to be amply supported by society and government. This has not been the case. In fact, both systems have been criticized for being more concerned with management than leadership; with survival instead of striving to fulfill potential; or simply, more concerned with doing things right, rather than doing the right things (Dale Lick, cited in Report of the Futures Task Force to ECOP, p.1). Let us now look at those changes which have occurred during the 1980s that have placed so much stress on such worthy professionals and their organizational systems.

Many forces have challenged American agriculture and education during the 1980s. Those forces were identified by the National Research Council (1988) as:

> Demographics; urbanization; rapid gains in worldwide agricultural production capacity; domestic farm and trade policies; lifestyle changes; global competition in basic and high-technology industries; the explosion in knowledge caused by increasingly sophisticated computers, digital equipment, and biotechnological techniques; specialization within the professions; and public expectations about the role of schools, the food supply, and public institutions (p. 5).

In addition, during the late 80s and the early 90s, one needs to include political agendas to downsize government and its institutions, environmental pollution and its costs, and economic recession and its accompanying uncertainties. Are the forces I have identified really different than those which are impacting on agriculture and education in Taiwan?

What Changes Need to be Made In Agricultural Education?

Several national studies have been released during the late 80s providing recommendations for strengthening agricultural education in the U.S. Some trends are already evident from reforms taken by extension and vocational education in agriculture during recent years. The latter include:

1. During the 1970s and 1980s, several agricultural teacher education programs transferred from colleges of education to colleges of agriculture, primarily to receive more technical support. Today, about three-quarters of such programs are located in colleges of agriculture.
2. During the same period, agricultural extension educators and agricultural teacher educators have increasingly found they are dealing with similar external problems. This has resulted in a strenghthened interface between the two groups. Today nine major land-grant universities formally recognize extension education in the title of their agricultural education department by calling their unit Agricultural and Extension Education. Approximately 80 other departments assume this dual responsibility, to varying degrees, as an integral part of their agricultural teacher education program. Philosophically, conceptually, and operationally, professional educational programs for extension personnel and teachers are hightly complementary.
3. In recent years, Departments of Agricultural and Extension Education have been broadening their program offerings to include courses in agricultural communications, international agricultural education, and general agricultural studies, as well as in extension education and vocational teacher education. This has allowed for curricular diversity, greater staffing depth, and increased flexibility in preparing professionals for employment in occupations requiring expertise in the applied behavioral sciences in agriculture.

After completing its three-year study of agricultural education programs in American secondary schools, the National Research Council made the following recommendations for agriculture teacher education (1988):

1. "Teacher education programs in agriculture should continue to stress applied learning, but should strengthen instruction in science, technology, economics, agribusiness, marketing and management, international agriculture, and public policy.

2. The federal government and elementary and secondary school teachers involved in teaching agriculture should work to develop, refine, and adopt methods for the transfer of information and knowledge from research laboratories and agricultural experiment stations to high school classrooms. An emphasis is needed on new methods to teach agribusiness marketing and management, principles of science, public policy, and international agriculture.
3. Teacher education programs in agriculture should establish formal links with colleges of agriculture and education, cooperative extension, and private-sector organizations to develop new in-service programs and opportunities for teachers and administrators.
4. Colleges of agriculture should become more involved in curriculum reform, creation of new material and courses, and in-service education programs. The USDA [U.S. Departmnt of Agriculture] should encourage these goals.
5. Teacher educators in agriculture should establish better links with colleagues in other colleges, such as experts in science education, business management, and educational technology.
6. Colleges of agriculture should encourage and help recruit talented students to enter the teaching profession. Departments of agricultural education should develop programs to inform school district counselors about career opportunities in the agricultural education professions" (p. 47).

After a one-year study, the Futures Task Force to the Extension Committee on Organization and Policy (ECOP) issued a report in 1987 entitled Extension in Transition: Bridging the Gap Between Vision and Reality. At least two of the various recommendations in the task force report addressed the educational training needs of Extension personnel:

1. Extension staff members at the county level should have skills in educational facilitation, and at least one technical skill appropriate to the locality. Also, that "county staff should represent a blend of disciplinary skills (subject matter and applied research), programming skills, and interpersonal skills (communicatioins, group process, and team building)." (p.12)
2. More specifically, the task force felt that Extension staff need more training in the following skills:
   - "Anticipatory/strategic planning
   - Interdisciplinary planning

- Networking and coalition building
- Program delivery and communication alternatives
- Professional management
- Programming to facilitate adoption of ideas" (p.13)

3. The report also stated that the professional needs to "be transformed into the manager/educator--managing and manipulating data based to effectively apply them to the real, dynamic, and changing problems of people and communities. The function of education to engender problem solution, rather that the more static concept of education for knowledge transfer, cannot be overstressed. The Extension network professional of the future must educate to permit positive change in human capital as well as effective client use of technology" (pp. 17-18).

Implications for Taiwan and AEEGI

Taiwan, a country with over 20 million people, has been without a program for preparing practitioners in agricultural education since the Department of Agircultural Education at National Chung Hsing University was closed in 1983. Since that time, the supply of teachers for V-A schools has diminished sharply--resulting in an aging group of agricultural teachers. This has been accompanied by a decline in in-service activities for agricultural teachers at a time when agricultural and educational technology has become increasingly complex. Agricultural teacher morale is reported to be suffering. Professionally, agricultural teachers in Taiwan have become orphans with no home to prepare new teachers, to articulate and respond to their in-service needs, or to provide research and development leadership in higher education. Now that the Ministry of Education has approved establishment of the Agricultural Extension Education Graduate Institute, National Chung Hsing University has an opportunity to again provide national leadership in the field of agricultural education.

In developing the new Institute, a few lessons or principles can be drawn from those trends in the U.S to which I referred earlier. They are as follows:

1. Governments can enact laws and provide support for educational programs to be initiated; however, once established, such programs need strong leadership if they are to be sustained and supported over time. For example, despite the pioneering role of Massachusetts in initiating agricultural education programs that influenced national

legislation, today, agricultural education programs in Massachusetts are struggling to remain operational during the midst of a severe economic resession. During the past three years, severe reductions in the Massachusetts Cooperative Extension System budget have threatened its future existence as an educational program.

2. Agricultural education programs need to be continually reviewed and revised when appropriate to meet the changing needs of society. The populations of both Taiwan and the United States are becoming more and more urbanized. Agricultural education programs need to reflect these demographic shifts and urban agricultural enterprises and problems without abandoning rural agricultural needs. This versatility can only be achieved by broadening or diversifying the curriculum.
3. Because of the multidisciplinary foundation of agricultural education, high priority needs to be given to promoting its program objectives and contributions among the academic community, general public, agricultural industry, and political leadership. Agricultural education is a field of specialization not well understood by professional educators, nor by many agricultural scientists. Agricultural educators need excellent human relations and communications skills, a good agribusiness and agriscience background, and a comprehensive understanding of what constitutes agriculture, both in Taiwan and internationally.
4. Agricultural education has both a formal and a nonformal dimension; however, operationally the two are closely related. The size and background of AEEGI faculty must reflect expertise in both extension and vocational education as well as sufficient depth to perform the functions identified in the AEEGI proposal. Even though the Normal School Law currently restricts the certification of secondary school teachers to those applicants who have completed their educational courses at one of three normal universities, the AEEGI needs to begin developing an agricultural teacher education faculty to provide the leadership so AEEGI can fulfill its potential. National Chung Hsing University needs to become a strong advocate for changing the Normal School Law so AEEGI can become approved by the Ministry of Education (MOE) to prepare V-A school teachers. The NCHU administrative leadership will need assistance from the AEEGI faculty to effectively present its case for MOE approval.

In additional to the above implications for Taiwan based on trends in the United States, I wish to endorse the three recommendations for change in Taiwan agricultural education which were presented by Dr. O. Donald Meaders at a workshop on vocational

agricultural education in Taipei a little over a year ago. Each of the three have implications for preparing practitioners and other related functions by AEEGI (Meaders, 1990).

1. "The V-A schools should be centers for agricultural and natural resources education for youth and adults. This should include both education in agriculture and education about agriculture" (p. 9).
2. "Teachers and administrators in V-A schools should be provided opportunities for conducting research about agricultural education and regular participation in in-service education ." Professor Meaders recommended the new "Institute should be established to provide leadership for in-service education and research as well as perform other functions" (p. 9).
3. "The Young Farmer education program should be strengthened by extending the systematic instruction to the post-high school period with emphasis on managememt. Other farmer education instruction should be continued and expanded in cooperation with the Farmer Associations and the District Agricultural Improvement Stations" (p. 10).

Let me take this opportunity to thank you for attending this workshop and for your assistance in helping to further establish the new Institute. Taiwan and National Chung Hsing University are both experiencing tremendous growth and development. AEEGI has the potential to become a dynamic source of applied behavioral sciences talent within the College of Agriculture and a great catalyst for change and renewal in agricultural education throughout Taiwan. With your continued support, AEEGI should achieve this potential. I now welcome your questions and/or comments.

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SESSION II

FUNCTION DESCRIPTION, QUESTIONS, AND WORKSHOP PARTICIPANT RECOMMENDATIONS BY FUNCTION DISCUSSION GROUP

DISCUSSION GROUP A: ESTABLISHING THE MASTER'S DEGREE PROGRAM IN AGRICULTURAL EXTENSION EDUCATION,-Happy Kuay-Ley Shieh, Coordinator

Function Description

During school year 1991-92, the Agricultural Extension Education Graduate Institute (AEEGI) at National Chung-Hsing University (NCHU) will begin offering relevant agricultural education courses to agricultural extension workers who want to dedicate themselves to agricultural training and extension work, to Vocational Agriculture (V-A) school teachers, and to related department graduates. Several guidelines are being developed for the master's degree program, in addition to meeting Ministry of Education requirements.

1. Purpose of the degree. The master's degree in Agricultural Extension Education is intended primarily for practitioners, to enhance their competencies for performing their assigned professional roles and to strengthen their leadership abilities. This is not considered to be a research degree.
2. Admission of students
   a. Applicants must obtain an acceptable score on the AEEGI entrance examination. However, priority will be given to applicants who have competed at least three years of successful experience in professional positions either as teachers of agriculture or extension workers.
   b. Mininum education requirements require a B.Sc. degree from a related department. (Related to teaching agriculture or to agricultural extension work.)
   c. Applicants should have career goals for continued service in agricultural education through formal (vocational) or nonformal (extension) teaching or in administrative or supervisory roles.
3. Academic program

a. Courses are being developed in six emphasis areas:
   (1)Administration and supervision (of agricultural extension and education programs)
   (2)Learning theory (youth and adults)
   (3)Curriculum development (courses and materials)
   (4)Agricultural communications and leadership development
   (5)Program planning and evaluation
   (6)Research in agricultural extension and education
b. Courses will be available not only to the students in the AEEGI but also available, as electives, to master's degree students in other related institutes.

4. Degree requirements
   a. Completion of at least 30 credits in a planned program consisting of the following parts:

(1)Major course credits	18
(2)Minor course credits	6
(Students may request approval of graduate level courses from departments such as agronomy, soils, agricultural economics, etc.)	
(3)Thesis credits	6

   b. Passing a comprehensive examination over the course work which has been completed.
   c. All requirements are to be completed within not less than two years. A maximum of four years may be allowed. If the candidate is a Research Assistant, not less than three years are required; and a maximum of five years may be allowed.

5. Laboratories

There will be ample opportunities for students, under the guidance of teachers, to put into practice the principles which are to be learned from the various courses. For some of the courses, the actual extension or V-A school programs will be utilized as laboratories through cooperative agreements with institutions such as Taichung DAIS, Taichung V-A School, and Yuanlin VA&I School.

In addition, laboratory space and equipment is being acquired by AEEGI for such activities as video-taping, preparation of slides, computer analysis of data,

computer storage of program planning and implementation information, etc.

6. Research as part of the degree requirements

Topics for thesis research will generally arise from problems faced by practitioners in the field, or from other problems identified by policy-makers, administrators, and supervisors. Some topics might come from the desire to try new approaches to teaching, evaluating, etc.

In general, the research should be based on testing of known principles; be action-oriented or be applied research. In all cases, the student should get approval from his/her advisor prior to initiating the thesis research.

7. Library resources

Books, journals, and related references and materials, both in Chinese and English, are currently being acquired for use by the faculty and students.

Discussion Questions and Participant Recommendations

1. How many applicants can be expected to apply to the master's degree program each year?
   a. A survey needs to be conducted of the groups which are expected to apply in order to determine the scope of the demand.
   b. Applicants may come from District Agricultural Improvement Stations, Farmers' Associations, and V-A schools.
   c. More applicants will be interested if their employers will provide leave-with-pay. Currently, there is no uniform regulation among the different agencies regarding length of time for leave-with-pay.
   d. In addition to the required entrance examination there should be an interview, a letter of recommendation from the employer, and a plan of study.
   e. The format of the letter of recommendation should be uniform for various quantified information.
   f. The plan of study should include how this plan relates to difficulties and problems encountered in their work.
   g. The interview should include an attempt to determine the feasibility of the study plan, the aspirations and the attitude of the applicant for a professional career.
   h. The selection of applicants should give a higher priority to those who are employed in, and have outstanding performance records in, teaching and/or extension work.

i. The requirement for admission should be

(1)Written exam.....40%

(2)Interview, letter of recommendation, plan, and other factors.....60%

j. The higher proportion of persons admitted should go to those who will be on leave-with-pay.

2. What do you feel will be the employment opportunities for professionals holding a master's degree in Agricultural Extension Education?

a. All of the graduates who are professionals will have an opportunity to return to their previous positions.

b. When the professionals go back to their original positions, some will perform at a higher level and others will be promoted to a higher position. (Some who do not get immediate promotions, may be less loyal to their work and supervisors.)

c. Their career opportunities will be broadened, and therefore, fewer of the graduates may be willing to return to the grassroots-level positions.

d. The establishment of an Agricultural Extension Committee within each V-A school will create additional opportunities for professional assignments.

3. Which features do you like best about the master's degree program as described?

a. There was a lack of consensus regarding the proportion of courses to be required in technical agriculture and the behavioral sciences. Some preferred a 2:1 ratio for behavioral science courses, others preferred a 1:1 ratio.

b. The emphasis within the courses should be: first, program planning and development; second, program evaluation; third, information dissemination; fourth, leadership training; fifth, teaching methods; and sixth, curriculum development and preparation of materials. (This is not considered to be an exhaustive listing of courses.)

4. Which program features would you like to see strengthened? How? [There were no responses to, nor recommendations from, this question.]

5. Please identify problems faced by practitioners today in agricultural extension and education that would make good research topics for the master's thesis. Suggested thesis topics were:

a. The solution of agricultural problems and issues which could result in increased income for farmers.

b. Balance and coordination between agricultural production and marketing.

c. Issues related to the production of quality produce.

d. Issues related to the improvement of the agricultural extension system.

e.The analysis of manpower demand and supply for agricultural extension.

f. Analysis and evaluation of short training courses on the productivity of participants.

g. The current issues in agricultural extension education.

h. Methods of extension teaching.

i. Ways and means to make an effective extension organization.

6. Other questions/concerns/issues.

a. The integration and coordination among components of the agricultural extension system.

DISCUSSION GROUP B: ESTABLISHING A RESEARCH PROGRAM IN AGRICULTURAL EXTENSION EDUCATION--Tse-Chun Yang, Coordinator

Function Description

During school year 1991-92, the Agricultural Extension Education Graduate Institute (AEEGI) at National Chung-Hsing University (NCHU) will begin offering relevant agricultural education courses to agricultural extension workers who want to dedicate themselves to agricultural training and extension work, to Vocational Agriculture (V-A) school teachers, and to related department graduates. Another important function of graduate institutes at NCHU is to conduct research. The purpose of the research program to be conducted by AEEGI is to strengthen both the present agricultural education system and extension education.

1. Kinds of research

Applied and action research will be conducted by faculty with assistance from graduate students and research assistants. Faculty will be urged to identify individual areas of interest for specialization of their research talents, as well as be willing to help in the research of topics which are suggested from sources outside the Institute.

Some of the possible areas for study, related to identified problems, are as follows:

	Ag Ed System	Ext Ed Function
a) Administration/superv	×	×
b) Farmer education	×	×
c) Evaluation	×	×
d) Teaching/learning	×	×
e) Communications	×	×
f) Instructional materials	×	×
g) Institutional roles	×	×
h) Curriculum/courses	×	×
i) Staffing	×	×
j) Other	×	×

2. Setting priorities

An advisory committee consisting of members from both within and outside the university will be established for periodic advice on kinds of research which is most needed for solving immediate problems and for recommendations for future policies.

One priority area for research related to extension education might be in the area of policies for administration and organization of the agricultural extension function within the colleges and universities. Also, attention can be given to research about the roles of the university for extension functions outside of the university, where the university serves as a resource, and others where the university is in charge.

3. Sites for research

Much of the research will be conducted in cooperation with actual programs in progress at V-A schools, DAIS, FAs, and others.

Some international, comparative studies will be undertaken with agricultural educators in other countries for the purposes of learning and sharing. For example, in countries where ROC (Taiwan) has technical development projects, there might be opportunities to join with agricultural educators in such countries for mutually beneficial research.

Discussion Questions and Participant Recommendations

1. What suggestions do you have for ensuring that research conducted by AEEGI directly benefits V-A schools and extension units throughout Taiwan?
2. What are some of the greatest and most troublesome problems affecting people (children and adults) and agriculture in Taiwan today?
3. Do you see any problems with the AEEGI research program as described? If yes, please identify the problems/s and make suggestions for resolving them.

4. Please identify problems faced by practitioners today in agricultural extension and education that should be given a high research priority by AEEGI.

[The above questions were presented to Discussion Group B. The following are recommendations from participants in group B].

(1)Research topics can be divided into two areas of knowledge-- human and technical. Both areas are related to administrative bottlenecks. Research in either topic area will be helpful to extension administration.

(2)Sources of research funds:

a. Funding directly from the Graduate Institute.

b. Funding may come from the Ministry of Education (MOE), the Provincial Department of Education (PDE), and the Provincial Department of Agriculture and Forestry (PDAF).

c. Funding in cooperation with other research institutes.

(3)Areas of research

a. Agricultural education

(a)Curriculum improvement in V-A schools.

(b)Investigation of employment opportunities for V-A school graduates.

(c)The determinants with respect to motivation for learning among V-A school students.

(d)Curriculum content for new and emerging topic areas.

(e)Teaching materials for new content areas.

b. Farm management, including production and marketing

(a)Education on safe use of agricultural chemicals.

(b)Case studies on successful farm management.

(c)Studies on the various combinations of farm enterprises on different size farms.

(d)Sociological dimensions of current agricultural issues.

c. Community, environment, village or neighborhood, and farmers.

(a)Rural community beautification.

(b)Regional planning for rural communities.

(c)Education for the rural farm families.

(d)Problems associated with urbanization im rural areas.

(e)Evaluation of environmental conditions ffor rural areas.

(f)The social and educational impacts associated with regional plans for agricultural production from the technological and economic points of view.

(g)The social and educational impacts associated with damage from natural disasters (typhoons, earthquakes, etc.). (Note : This is an additional consideration for the insurance programs.)

(h)The ways to increase farmer income through alternative options including management decisions.

(i)Studies about agricultural issues such as subsidies, pollution,and environmental protection.

d. Administration and the extension system

(a)Renewal and improvement of 4-H education.

(b)The devotion and dedication of extension professionals.

(c)Improvement of the integration of the agricultural extension system.

(d)Establishment of a licensing system for sale and distribution of agricultural supplies and services.

(e)Promotion of the need for farm management education in V-A schools (emphasis on promotional efforts to the parents).

5. How broad is your definition of agriculture? In other words, does it include mariculture, environmental protection, urban and interior landscaping, companion animal care, and related nonfarm activities?

(1)It should include the services needed by farmers.

(2)Studies related to the development of administrative and organizational patterns as well as curricula and course contents for performance of the new function by V-A schools.

(3)Characteristics of leaders in rural communities in Taiwan.

(4)Studies to determine the causes and possible solutions to the low morale of V-A teachers and extension workers.

(5)Study farmer knowledge about, and expectations for, the government role in price supports and agricultural insurance programs for farmers, including health insurance.

(6)Protection of farmland holdings and inheritance patterns for preservation of viable farms.

(7)Study the methods for promoting the spirit of cooperation for production and

marketing of agricultural products.

(8) Study the effectiveness of various methods for teachers and students to be involved in participatory experiences in agriculture.

(9) Study ways of increasing the number of young persons to enter full-time farming

(10) Evaluation of teacher performance and effectiveness of incentives to change behavior.

(11) Research related to motivational efforts to encourage teachers to participate in professional improvement activities.

6. Other questions/concerns/issues. What are those graduate courses the Institute can offer, and what are those expected by the V-A teachers?

(1) Curriculum design and planning for new courses to be taught.

(2) Research on the standards needed for equipment and facilities for the different divisions in V-A schools; and the extent of current utilization of facilities and equipment.

(3) The effectiveness of extension methods adopted by the Republic of China's technical missions in various countries.

(4) Evaluation of the performance of graduates from the Institute.

(5) Evaluation of the needs of older (age 65 and over) farmers.

(6) Measurement of the motivational level of professionals serving in extension and agricultural education.

DISCUSSION GROUP C: ESTABLISHING A VOCATIONAL AGRICULTURE TEACHER PREPARATION PROGRAM--Chi-Ho Hu, Coordinator

Function Description

During school year 1991-92, the Agricultural Extension Education Graduate Institute (AEEGI) at National Chung-Hsing University (NCHU) will begin offering relevant agricultural education courses to agricultural extension workers who want to dedicate themselves to agricultural training and extension work, to Vocational Agriculture (V-A) school teachers, and to related department graduates. There currently is a shortage of qualified teachers of vocational agriculture for schools in Taiwan and no program providing teacher education certification courses in agriculture. A major function of AEEGI is to establish agricultural extension education courses so

that graduates from related departments in the College of Agriculture, who are interested in agricultural extension education, can be qualifed to be agricultural extension specialists and Vocational agriculture teachers after taking the courses.

Discussion Questions and Participant Recommendations

1. How many newly certified teachers of vocational agriculture are needed each year?
   a. Reference should be made to the Provincial Department of Education (PDE) for their information about demand for agricultural teachers in V-A schools and technical institutes. That report includes number of teachers retiring (compulsory and voluntary), number of classes for students, and other factors.
   b. The Council of Agriculture (COA) has recently supported the National Chiayi Institute of Agriculture on agricultural manpower planning. That report, when available, should be utilized.
   c. It is desirable to get reliable information school by school to supplement the information from PDE.
   d. The use of questionnaires for securing information is desirable. Such information would be useful for preparation of plans; short-range, mid-range, and long-range.
   e. There are 1,098 teachers in V-A schools, of which 52 percent are teachers for the agricultural courses. If the turnover rate is three percent, then 17 new teachers are needed annually.
   f. The new Institute should offer the required 20 credits in education for the purpose of meeting the needs of new agricultural teachers.
2. What is your source of new teachers of vocational agriculture; i.e., from which institutions (technical diploma and professional education)?
   a. Some teachers are secured by accepting transfer of qualified teachers from other schools.
   b. Selection by the school with the position vacancy. This may be done by written examination, interview, and trial (demonstration) teaching.
   c. Engage the qualified teacher.
   d. Transfer of teachers from the private schools but this requires an examination.
   e. Schools in remote areas may recruit agricultural teachers by examination, hoping that the 20 educational credits may be waived--especially in technical fields such as veterinary.

f. Many of the agricultural teachers on probation are graduates from National Taiwan University (NTU) and National Chung Hsing University (NCHU) with master's degrees. They need only 10 education credits.

3. How severe is the shortage of qualified teachers of vocational agriculture in Taiwan? Is there anything the AEEGI can do to alleviate this shortage?
   a. There is a severe shortage of qualified teachers. The new Institute is expected to have an energetic plan to solve that shortage of qualified teachers through the master's degree route.
   b. The shortage is not severe in all schools.
   c. The new Institute should offer educational courses with Ministry of Education (MOE) permission during the summer vacation period to help alleviate the shortage.
   d. Encouragement should be given to unqualified teachers to complete the additional courses for a bachelor of science (B.S.) or master's degree.
   e. There should be a policy of pluralism for alternate routes to certification.
   f. The new Institute should offer educational coruses to help the unqualified teachers become certified.
   g. The teacher shortage will become more serious in the future due to the number of certified teachers who will reach the age for retirement in the next several years.
4. Presently, graduates with B.S. degrees in agriculture must complete 20 credits of education courses in order to become certified to teach. AEEGI may eventually offer courses in agricultural teacher education, most of which could include the general education content found currently in courses taken at national normal universities plus content and methodologies appropiate to teaching agriculture. Which education courses do you feel are absolutely essential for agriculturalists planning to become teachers?
   a. Agricultural Education courses
      (1)General education courses required by MOE.
      (2)Preparation of teaching materials and methods of teaching agriculture.
      (3)General education courses.
      (4)Educational psychology.
      (5)Teaching materials and teaching methods of agricultural technical courses.
      (6)Methods of extension.

b. Technical courses

(1)Introduction to agriculture

(2)Rural sociology.

(3)Farmers psychology.

(4)Fundamentals for proper use of tools.

(5)Applied agricultural mechanics.

c. Other

5. Identify any courses which agricultural teachers should take which are not presently offered at the national normal universities.

a. Rural sociology and other agriculturally related courses.

b. Agricultural cooperation, including farmer cooperatives. Environmental protection; air and water pollution. Information in general about agriculture.

c. Agricultural materials and agricultural teaching methods. Technical courses.

6. Should all prospective agricultural teachers first have to complete a student teaching internship before being certified to teach vocational agriculture? If yes, for how long? Two semesters? One semester? Other?

a. Internships are necessary, no matter how long. Appraisal of performance must be thorough and critical. Unsatisfactory internship must lead to dismissal from the certification program to avoid future problems.

b. The length of the internship should be for one school year, identical with the requirements for graduates from the normal universities.

c. Internship is better than probation teaching. It implies the Presence of supervision and assistance to the intern.

d. One year for an internship is better than a shorter period.

e. Follow the regulations as prescribed by the rules and regulations for all secondary teachers.

7. How are V-A and agricultural extension programs evaluated in the Republic of China?

a. The evaluation of professionals should have separate criteria along the lines of behavior and competence. This includes behavior both on and off the job.

b. The agricultural extension program must be based on the economic return of the program.

c. The future trends in evaluation will be for self-evaluation as one part of overall evaluation.

d. Evaluation should be practical and down-to-earth rather than routine checks on a standard form.

e. Evaluation should be pragmatic to serve the purpose of the evaluation.

f. We can learn from developed countries on the ways and means of evaluation.

g. An evaluation study should be jointly carried out between the AEEGI and the administering organizations for agricultural and extension education programs. (Remember the Golden Rule: He who has the gold, rules.)

8. What improvements are needed in the agricultural extension and agricultural teacher education programs in Taiwan?

a. The status of extension personnel should be clarified. Are they employees of civic organizations or government employees?

b. The District Agriculture Improvement Station (DAIS) should be considered as the information clearinghouse for extension education.

c. The students for the new Institute should include the extension workers from the Farmers Associations. Special diploma or certificate programs will need to be designed.

d. The V-A school graduates should be licensed according to their specializations.

e. There must be a new regulation to bring the farmland fragmentation under control.

f. The extension workers, for most effective dissemination of appropriate information and technology, must be trained in areas of agricultural communications.

g. Subject matter specialists from DAIS and research institutes may be engaged by the V-A schools as technical teachers.

h. V-A school teachers engaged in extension work should have fewer hours for teaching, fewer than those teachers not engaged in extension.

i. The books, journals, and equipment in the V-A schools should be updated and renewed on a regular schedule.

j. The V-A schools should be viewed as a part of the extension system, just the same as the colleges and universities.

k. There should be alternative ways for V-A teachers to receive professional development, more new courses for the school curricula, and more channels for the extension program.

l. The title of the proceedings of this workshop should have the word industrial removed.

m. There should be a new section with the title Extension added to the Farm Practice Department.

n. Extension personnel should have the same qualifications as agricultural teachers.This would facilitate communication and exchanges between the groups.

o. The graduates from the previous Agricultural Education Department, NCHU, and graduates from other agricultural departments at NCHU, should be called back for graduate study with respect to agricultural education administration and technology.

I. Other questions/concerns/issues. [None]

DISCUSSION GROUP D: SUPERVISING AN IN-SERVICE PROGRAM FOR TEACHERS OF VOCATIONAL AGRICULTURE AND PROVIDING IN-SERVICE PROGRAMS FOR AGRICULTURAL EXTENSION PERSONNEL--Jih-Min Sung, Coordinator

Function Description

During school year 1991-92, the Agricultural Extension Education Graduate Institute (AEEGI) at National Chung-Hsing University (NCHU) will begin offering relevant agricultural education courses to agricultural extension workers who want to dedicate themselves to agricultural trainign and extension work, to Vocational Agriculture (V-A) school teachers, and to related department graduates. A major function of AEEGI is to provide leadership for development of in- service programs in support of the vocational agriculture and agricultural extension programs. The faculty in AEEGI will be expected to become advcoates for human resource development both in a proactive and.reactive sense.

The design of effective in-service programs will require a close working relationship with both the proposed clientele and the administering/funding agencies. Emphasis will need to be placed on the quality and long-range implications for the in-service activities. Already V-A teachers are asked to participate in many outside of school activities, often requiring them to delay some instructional duties in order to participate on committees, etc. Provisions will need to be made for staffing in such a manner that participation in in-service is viewed positively rather than as an extra burden.

There are special problems to be overcome in planning and conducting in-service for extension workers. First, the task is so great that no one institution can possibly do the job. Second, there will need to be coordination with the proposed revision in the Extension Law so that incentives and evaluation help provide positive attitudes toward professional development, on the part of policy makers and administrators.

The AEEGI will most likely focus on certain aspects of in-service and leave other aspects for other institutions. The identification of such a focus is going to be one of the factors as faculty are selected for the various positions in the AEEGI. The areas of specialization are in the process of being identified so that the team of faculty members provides a balance for such programs as well as for the basic credit courses to be taught. In brief, the Institute will:

1. Provide in-service for teachers and others in V-A programs as requested by various agencies and organizations.
2. Provide short courses at the request of teachers, extension workers, and others.
3. Develop initiatives for new and different ways to achieve greater levels of human resource development.
4. Offer certificates to those who satisfactorily complete the programs.

Discussion Questions and Participant Recommendations

1. What are the areas of greatest in-service need for V-A teachers today? How are those needs being presently met?
2. What are the areas of greatest in-service need for extension workers today? How are those needs being presently met?
3. Identify techniques that AEEGI might use to achieve greater levels of human resource (professional) development among V-A teachers and extension workers.
4. Since it would be unrealistic to expect AEEGI to assume reponsibility for all in-service education for agricultural extension workers and teachers, which aspects of in-service education do you feel AEEGI should focus on?
5. Other questions/concerns/issues.

[The above questions were presented to Discussion Group D. The following are recommendations from participants in Group D.]

a. The content of in-service education.

(1)Follow the principle of continuity, related to the background of the participants.

This is especially important for agricultural teachers.

(2)The participants should be exposed to the latest research findings, including farm practices, improved varieties, market information, farm management, dissemination of information, agricultural policy, extension teaching methods, and farmers organizations.

(3)The name of the courses should be identical with the specifications acceptable to PDE and/or MOE.

b. Ways of arranging the in-service training.

(1)May include short-term, middle-term, and long-range training.

(2)Short-term in-service training may last one week.

(3)Middle-term training may last from one to two months, according to the course requirements. These are to be taught during either the summer or winter vacation periods.

(4)Long-range in-service training should be emphasized and comprised of 40 credits over several years. The number of participants per class should not be as great as in the industrial education classes and this should be emphasized regardless of the cost.

c. Incentives for in-service training.

(1)Short-term and middle-term training. Certificates should be issued after satisfactory completion of the course. The certificates should be an integral part of the participant's achievement.

(2)The long-range training, which takes much more time and involves 40 credits, will be especially advantageous for professional advancement. The courses taken for credit may be offered through alternative approaches such as television, computer, etc.

(3)When these kinds of courses are offered (short-term, midterm, long-range), arrangements should be made to take into consideration the needs of technical institute graduates, teachers and extension personnel of older age, and those who already have achieved higher levels of education.

d. Funding the in-service training.

(1)The Institute should have interaction with agricultural agencies in regard to the content of in-service training and support of the budget. In addition, the information about the nature of the courses should be widely distributed by use

of newsletters, monographs, broadcasts (radio), special mailings, etc. This should include requirements for application.

e. Coordination among agencies.

(1)For extension personnel, the in-service training should place emphasis on the technical side in order to strengthen their competence and confidence.

(2)Horizontal coordination should be emphasized by inviting instructors from other organizations such as DAIS, research institutes, and V-A schools.

f. Miscellaneous with emphasis on difficulties.

(1)Lack of financial support to assist personnel to participate, unless the Institute offers unique courses and separate funding.

(2)The high turnover rate for extension personnel in the Farmers' Associations (many factors affect this including political considerations) may be beyond the control of the Institute.

DISCUSSION GROUP E: ESTABLISHING A PROGRAM OF SHORT-TERM AGRICULTURAL MANAGEMENT TRAINING COURSES--Tso-Kwei Peng, Coordinator

Function Description

During school year 1991-92, the Agricultural Extension Education Graduate Institute (AEEGI) at national Chung-Hsing University (NCHU) will begin offering relevant agricultural education courses to agricultural extension workers who want to dedicate themselves to agricultural training and extension work, to Vocational Agriculture (V-A) school teachers, and to related department graduates. The College of Agriculture, through its departments, graduate institutes, and current Extension unit, frequently responds to requests for short courses. In order to be more systematic in response to such requests, the AEEGI will become the administrative unit for coordination of such offerings.

AEEGI, with its faculty of experts in various areas of adult and youth learning, curriculum development and course planning, communication skills and leadership development, program planning and evaluation, and administration and supervision, can help technical specialists from the various departments in planning, conducting, and evaluating the courses which are requested.

The work of planning, conducting, and evaluating the agricultural management courses will provide a natural opportunity for "hands-on" instruction for the students in the Institute.

The faculty to be assigned to the AEEGI will come from various backgrounds and areas of professional expertise. Some assistance will be provided by faculty form Michigan State University on rotating assignments until a sufficiently well qualified and diverse indigenous AEEGI faculty can be developed.

Discussion Questions and Participant Recommendations

1. How can V-A schools and Extension units better coordinate and consolidate their requests for short-term agricultural management training courses to AEEGI?
   a. There are so many V-A schools and extension institutes, AEEGI is not able to take all the requests from different sources. Therefore, the Institute must find out the needs by questionnaire survey, identify the content, and who needs the training. The Institute needs to integrate the survey findings and develop a training plan on an annual basis.
   b. There is already a plan for extension in-service training. After enactment of the new extension law, the Institute will need to clarify with the funding agencies (PDE, MOE, PDAF) its responsibilities for farm management training courses. This should include the nature of farm management courses associated with different lengths of training classes to avoid overlapping and confusion.
   c. The farm management courses made available to the applicants should take regional differences, job requirements, and farming patterns into consideration. Those differences need to be reflected when course content is developed for specific classes. This will require prior consultation with the DAIS and V-A schools concerned.
   d. The Provincial Department of Education (PDE) has complete survey data concerning the desires among agricultural teachers for in-service and graduate studies. Those data can be used to identify the nature of farm management courses and the direction of future planning. But, the training classes should not be too frequent and the length of each class should be shortened in order not to interrupt the normal teaching schedule in V-A schools.
2. Are there any Chinese-speaking agricultural extension or education specialists who you

know (either on Taiwan or overseas) that might be sufficiently qualified and interested in becoming a candidate for the AEEGI faculty? Please identify those individuals.

a. It is suggested that the Dean, College of Agriculture, NCHU, should be concurrently the Director of the new Institute.

b. The faculty members at the new Institute should be carefully recruited to be sure they are well versed in both theory and practice. It may be desirable to create the position of lecturer for subject matter classes and invite other outstanding researchers from research institutes and DAIS to serve in that role.

3. What kind of agricultural management training courses are needed by V-A teachers and extension workers?

a. The new courses should be so arranged as to meet different needs of specification of work and education levels, and so on. The training classes should also be classified as comprehensive and professional. In the latter, new techniques, methods, new varieties, and urgent problem solving could be included such as the level of safety of fungicides, quality control of flowers, tissue culture, etc.

b. The curricula of comprehensive farm management training classes should at least include the following courses:

(a)Agriculture and agricultural management policies.

(b)Farm design and management.

(c)Farm management analysis.

(d)Assessment of planning economics of agriculture.

(e)Marketing surveys and analysis.

(f)Agricultural cooperation and cooperatives.

(g)Farm product marketing policies.

(h)Agricultural extension planning and evaluation.

(i)Rural community design.

(j)Farm family bookkeeping and analysis

(k)Productive organization and 4-H clubs of farmers.

(l)Farm surveys and statistics.

(m)Computer and farm management.

(n)Agricultural forecasting methods and practices.

c. In short-term courses, theory and practice should both be emphasized. Professors and experienced experts should be advised to offer these courses together (to team

teach wherever possible). Successful farm managers should be invited into class to make a report of how they succeeded and factors influencing their success. Systematic analysis should be made by professors so as to provide a guide for those students to follow.

d. Courses in the ethics of educational administration should also be emphasized--in the short-term training--for promoting campus ethics and the image of the worker. Also, teachers and extension workers need to be trained in the theory and methods of how to collect and use data in developing their abilities to do research work.

4. How might College of Agriculture faculty be better utilized in providing agricultural management training assistance to V-A schools and Extension units?
   a. The AEEGI should provide a list of names of professors who are willing to teach courses in V-A schools and extension organizations.
   b. At the present time the major weakness of farm management training classes is they lack teachers to teach comprehensive production techniques and management courses such as crop rotation techniques and management; field crop production combined with fish and livestock raising; and cold storage, packing, and inspection, etc.
5. Other questions/concerns/issues
   a. A nationwide system of agricultural extension information centers should be quickly established in the AEEGI for establishing a network for agricultural information.
   b. An agricultural extension and education workers training center could also be considered to be located in AEEGI. Dormitories and meals provided by this center are required.
   c. PDE is a controller of teacher training programs. Credits that are earned by teachers from their training courses in AEEGI should be accepted by PDE and certificates should be issued to stimulate teacher desire for advanced study.
   d. An agricultural extension section should be located within the Practice Division of the V-A schools to provide opportunities for employment to the graduates of AEEGI.
   e. It was suggested that V-A teachers could be the farmland owners for agricultural production. The chief secretary of the local farmers association and the chairman of the local irrigation association should be trained in AEEGI also. Graduates of junior colleges and technical institutes should obtain B.S degrees before they enter the AEEGI to pursue the master's degree.

SESSION · III

CLOSING REMARKS--FUTURE PLANS FOR AEEGI

by

Dr. Cheng-Chang Li, Dean
College of Agriculture, NCHU

Distinguished guests, principals, and colleagues from local V-A schools, and colleagues of NCHU: Before concluding the collective ideas of this workshop, I would like to take the privilege first to express my great appreciation for your active participation during the seminar and taking the time from your busy schedules to share with us your expertise and experience. In the past two and one-half days, the precious constructive comments provided from each of your areas of expertise have truly enabled us to achieve the primary goals we have set. Without your active participation, the fruitful achievement we have made so far would certainly not have been possible, and neither the historical accomplishment of the assigned mission.

During the past two and one-half days, we have heard so many precious comments and suggestions in regard to the workshop objectives, the sources of students, and the main teaching and research programs of the Agricultural Extension Education Graduate Institute, soon to be established. Instead of reiterating what has been addressed, I would like to place emphasis on some of the conclusive points provided by the professors who led the discussion in the five sections.

1. In regard to the main objectives of the establishment of the new institute, it was generally agreed that the short-term goal should be to design and provide various advanced courses to the extension practitioners and the vocational agriculture (V-A) school teachers, who are on leaves of absence from their employers, as well as to the graduates of related fields who want to dedicate themselves to agricultural extension and training work. And the fulfillment of these course requirements should lead to the award of a Master of Science degree.
2. To meet the graduates' needs while facing the quickly changing agricultural activities in their future careers, the course arrangement must take into account seriously both the need for specific agricultural techniques as well as for those competencies in the social behavioral sciences. The new institute should work out a system which

may provide students a balanced growth of scientific backgrounds in both required aspects so that they can become well prepared for the challenges in their future work.

3. As for the mid-term goal of development, once the Ministry of Education lifts the limitation of normal school as the sole institution for school teacher preparation, we should be prepared to provide courses and training related to this objective. For V-A schools, I am sure that this arrangement would assure the source and the quality of teachers they needed for a long time. Another important mission most of you have expected from the newly established institute is to provide short-term training courses for either agricultural practitioners or V-A school teachers. The Agricultural Extension Service Committee of this college has served this function fairly well in the past. In the future, we shall have the related personnel of the committee and faculties of the new institute working together to provide better services for the increasing demands for short-term training.
4. The source of students has been a subject of great concern during the workshop. We all realize that on-the-job training is an important short cut which would improve most directly and effectively the quality of our agricultural practitioners and V-A school teachers. Taking the fairness of the entrance examination into consideration, I am convinced that a reasonable alternative evaluation system for recruiting student needs to be thoroughly studied and established, so that only students with real "service enthusiasm," but with"enough academic potential," can gain access to the proposed master's training program. On the whole, our main objective is not to exclude a single student who has real potential and would dedicate themselves to serve and to better enhance the quality of the society in which we live. So on one hand we need to open the channel to bring in students who are already practicing in this field. But, on the other hand, we also don't want to let out any young college graduates who are willing to join this cause. After we have students from the right sources, it is our duty to provide them well organized academic as well as practical training course which would lead not only to the strengthening of their academic background, but also to the great enhancement of their specific professional agricultural techniques, extension and communication skills, leadership abilities, and most importantly the enthusisam for service initiatives. All the graduates thus trained should be determined to pursue the mission of transferring and transmitting techniques and scientific knowledge. To achieve this determined goal, colleagues, and myself for sure, will do our best and I

am very confident that we are all well qualified and more than competent.

5. There are some common agreements in regard to the approaches and arrangements of the practical training courses. In addition to the general extension and communication skills and concepts, training in various specific agricultural techniques is also an activity worthy of attention. In my point of view, although we all agreed that we can set short, intermediate, as well as long- term goals respectively for the training courses, we should always keep mind a basic principle in scientific training. It is absolutely essential that all our activities be based on updated high technologies, current business management ideology, integrated production and marketing, and an internationalized view on agricultural production. This, together with training in leadership ability and skills in organization and communication, should build up the competencies required for performing extension as well as teaching in the future careers of our students.

The points stressed above about what should be done is a summarization of what I hav learned during the meeting from all your comments and suggestions. On behalf of the College of Agriculture, I can assure you that not only the faculty and staff of the Agricultural Extension Education Graduate Institute, but all the colleagues of this college will do our best to get the new institute operational as soon as possible to fit the reality of our society. At this moment , let's keep our fingers crossed that very soon we will have a new batch of young, sincere and enthusiastic, and fully confident front-line combatants to participate, regenerate, and reexplore our agricultural activities. Before I close this talk, let me once again express my hearty appreciation to all for your contributions and cooperation during the meeting. I wish you all good health and a successful and brilliant career in the future. Thank you very much.

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